System Release 2.21
MOTOTRBO™ PCR

MOTOTRBO™ Radio Management 2.0 User Guide

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About MOTOTRBO Radio Management User Guide

What is Covered in This Guide

This guide contains the following chapters:

- Introduction to Radio Management on page 67
- Radio Management Common Tasks on page 186
- Radio Management Sets for MOTOTRBO on page 204

Helpful Background Information

Motorola Solutions offers various courses designed to assist in learning about the system. For information, go to https://learning.motorolasolutions.com to view the current course offerings and technology paths.

Related Information

Motorola Solutions offers various courses designed to assist in learning about the system. For information, go to http://www.motorolasolutions.com/training to view the current course offerings and technology paths.

Related Information	Purpose
Capacity Max Installation and Configuration Manual	Provides installation and configuration content to support a MOTOTRBO™ Capacity Max system.
Capacity Max System Operations, Troubleshooting, and Maintenance Guide	Provides basic operations, troubleshooting, and maintenance content to support a MOTOTRBO™ Capacity Max system.
Capacity Max System Release Upgrade Guide	Provides instructions for upgrading software in a MOTOTRBO™ Capacity Max system from one system release to the next system release.
Capacity Max Migration Guide	Provides instructions for using the Capacity Max Bridge to migrate from the MOTOTRBO™ Connect Plus trunked radio system to the Capacity Max commercial grade trunking system.
Capacity Max System Advisor Guide	Provides fault management, system, and call monitoring solutions for a Capacity Max system.
MOTOTRBO CPS and AirTracer Applications Installation Guide	Provides the installation procedures and system requirements for following applications: • MOTOTRBO™ Customer Programming Software • Radio Management Server and Radio Management Device Programmer • MOTOTRBO™ AirTracer

Related Information	Purpose
	• MOTOTRBO™ RDAC • MOTOTRBO™ Tuner
Repeater Diagnostics and Control (RDAC) User Guide and *Online Help*	Explains the features of the MOTOTRBO™ RDAC, which is a standalone Windows application for system technicians who need to run diagnostics on the radio (repeater or base radio) that has the RDAC capability.
MOTOTRBO CPS Radio Management User Guide and *Online Help*	Provides information about the Customer Programming Software structure and features which allows technicians to manage all radio components, in addition with Radio Management which provides a centralized management of programming radios in-the-field.
MOTOTRBO Radio Management User Guide and *Online Help*	Provides information about the Radio Management (RM) which allows the user to manage an entire fleet of radios that are connected to the Radio Management Configuration Client (RMC).
MOTOTRBO System Design Tools	Estimates the infrastructure and loading constraints on a MOTOTRBO™ system. The System Design Tools is a down-loadable program from Motorola Online.
WAVE 5000 Solution System Planner for release 5.13	Provides guidance on when it is appropriate for a WAVE 5000™ deployment with a MOTOTRBO™ system.
Wave 7000 System Planner for release 17.3	Provides system operators' supporting the WAVE 7000™ server to collect and generate reports on statistical data on the MOTOTRBO™ system performance.
SmartPTT PLUS	Provides an explanation of the components of 3rd party supported solution for Control Rooms compatible with MOTOTRBO™ systems.
IMPRES Over Air Battery Management	Provides information about the functionality of the application managing batteries for radio fleets.
Radio Management Deployment Guide	Provides recommendations for deploying an RM system within a customer's network. It provides hardware recommendations for the various RM components based on customer requirements and the number of radios in the fleet. This guide is included with the RM Installation Suite DVD media.
Standards and Guidelines for Communication Sites Feature Guide	Provides standards and guidelines that should be followed when setting up a communications site. Also known as the R56 manual.
Radio Management System Planner	Provides information about Radio Management system components, installation, and troubleshooting of possible issues.

Chapter 1

Introduction to Radio Management

Radio Management (RM) allows the user to manage an entire fleet of radios that are connected to the Radio Management Configuration Client (RMC). A single archive can be imported, edited, and used as a configuration for multiple radios. Many individual radio identity settings can be reviewed or edited directly in a user-friendly table without having to open or edit an archive. Changes to the configuration or individual settings can be scheduled as programming jobs. Jobs push out the new configuration Over The Air (OTA) or when radios are connected via a USB programming cable (see Scheduler in Radio Management on page 128). To make managing multiple radios more convenient, radios can be organized into groups and information can be quickly searched and sorted.

RM introduces a client-server model whereby multiple RM clients can work on the same set of archives and individual radio identity settings from a centralized server.

See the MOTOTRBO™ Radio Management Overview Video for more details.

RM supports the following system components:

Table 1: Radio Management System Components

Component	Description
The Radio Management Configuration (RMC) Client on page 68	Windows-based desktop application used to manage an entire fleet of radios that are connected to the RMC. Multiple installations of the RMC are supported.
The Radio Management (RM) Server on page 144	Server hosting the system database used to store archives, Configurations, Sets, individual radio identity settings, and job information. **NOTICE:** Only one RM Server is supported per RM system network. The RM Server Utility on page 145 of the RM Server is used to configure User Authorization on page 149 access to the RMC application.
RM Device Programmer and RM Device Monitor on page 162	A Windows service that performs the read, writes, and switchover jobs that are scheduled in the Job view. Multiple installations of the device programmer are supported. The RM Device Monitor is the user-interface to configure the RM Device Programmer and to view its current operations.
RM Job Processor on page 169	A Windows service that processes all scheduled jobs. Multiple installations of the job processor are supported.

The Radio Management system components can be installed on a single standalone computer. However, Motorola Solutions recommends a separate computer for the RM Server to experience superior power and flexibility. Installing the RM Server on a separate computer allows for multiple RM Configuration Clients to remotely share the stored data.

Additionally, many RM Device Programmers can be configured as USB programming stations on separate computers to increase programming power, or simply to make physical access more convenient. When a radio is connected to a programming station, the RM Device Programmer connects to the RM Server. If a job was scheduled for that radio, the radio is programmed with the latest updates.

AutoUpdate RM System Components

Radio Management provides the AutoUpdate Enable for Radio Management on page 176 feature to ensure that the RM system components are always compatible with the RM Server.

1.1
The Radio Management Configuration (RMC) Client

The Radio Management (RM) Configuration Client is the primary user interface for managing and programming radios.

NOTICE: User credentials must be provided when connecting to the RM Server from the Radio Management Configuration Client. See User Authorization on page 149.

The following menus and views are supported:

1.1.1
User Interface Overview

This section describes the different areas of the Radio Management Configuration Client user interface.

1.1.1.1
Menu Icons and View Selector

The user can access the main menu functions and client views across the top.

Table 2: Menu Icons and View Selector

Icon	Functionality
	The **Actions** menu contains all the functions and operations that RM supports in a convenient drop-down list.
	The **Scheduler** menu is enabled when one or more radios in the main window are selected. The Scheduler allows for read, write, or switchover jobs to be scheduled for immediate execution or to occur within some specified window of time.
	The **View Selector** toggles the set of information shown in the programming windows to represent the **Radio View** when the radio icon is selected, the **Radio System View** when the antenna icon is selected, or the **Job View** when the hammer icon is selected.

1.1.1.2
Navigation Pane in RM Configuration Client

The navigation pane in the RM Configuration Client allows the user to switch between different items within the following views:

- Configuration View
- Set view
- Data Mining view
- Resource view

The different views are displayed by selecting **Actions→Manage**.

Auto Hide the Navigation

To increase the Programming area to the right of the navigation pane, the user can select the **Auto Hide** pin icon in the header section. When selected, the navigation pane becomes unpinned and collapses to the left. The name of the current view is then displayed vertically. Selecting the vertical view name, expands the navigation pane. To pin the navigation pane to the application, select the horizontal **Auto Hide** pin icon.

1.1.1.3

Programming Pane in RM Configuration Client

The programming pane in the RM Configuration Client is the primary area in the application where users select and configure radio features and properties. The information is structured in a table format with column headings and rows for each item.

The following sections describe operations that can be performed in the programming pane:

- Operational Buttons in Radio Management on page 69
- Row Selection in Radio Management on page 69
- MVO Lock Icon on page 70
- Search Feature in Radio Management on page 70
- Arrange and Hide Columns in Radio Management on page 70

Operational Buttons in Radio Management

The operational buttons allows the user to manage the radio data in the RM Server database. These buttons appear in main views, such as Radio View, on main Set windows and also above List Item tables within a Set.

NOTICE: If a button is not enabled for the selected row, then the requested operation is not supported. Some areas in the programming pane may only allow for a single operation, such as export.

Table 3: Operational Buttons in Radio Management

Button	Description
	The Edit button is used to modify the properties for the selected row.
	The Add button is used to add items to the table.
	The Delete button is used to remove the selected item from the table.
	The 3-dot button provides more options. The options that are available from this button vary.
	The Grid to File button is used to export the data for the selected rows to a comma-delimited CSV file.
	The File to Grid button is used to import the data from a comma-delimited CSV file to the RM Server.

Row Selection in Radio Management

The selection of items is performed by hovering the pointer to the left of the relevant row and clicking the left mouse button. Hovering the pointer over the first column in a row changes the pointer from a

standard pointer to a hand pointer. The SHIFT and CTRL keys are used to select a range of rows or selective rows. Selected rows are highlighted.

Figure 1: Example of Selected Row

MVO Lock Icon

When editing a Set within a Configuration, some fields are dependent on the model, version, and options (MVO) for the device being programmed. See Model, Version, and Options on page 175.

By default, MVO related fields are locked and RM uses a default value that is supported by the device. In order to enter a value other than the default value for an MVO field, click on the **Lock** icon.

WARNING: Unlocking and entering a value other than the default can make the configuration invalid for other devices that share the configuration. The user must understand how editing an MVO field can impact the devices that share the configuration.

Figure 2: Model Version Option Fields

Search Feature in Radio Management

The Search field in the programming pane allows the user to search for content within the table. The search feature searches through every cell in the table and only displays rows that contain some or all of the search criteria.

Arrange and Hide Columns in Radio Management

Columns in the programming pane can be arranged by dragging any column by the header section to a new location. Once a column is selected and dragged, arrows appear above and below the header section to indicate the new location.

The columns displayed in the programming pane can be hidden to show only those columns of data that are relevant. To hide columns, right-click over any column header to open the **Field Chooser** window and select only the relevant fields to display.

1.1.1.4

Information Windows in RM Configuration Client

The Radio Management Configuration Client provides information windows along the bottom of the application. By default, these information windows are hidden, where only the names are visible in tabs.

The following windows are supported:

- Analyze Results Window on page 71
- Tasks Window on page 72
- Compare Results Window

- Validation Results Window on page 74
- Warning Messages Window on page 75
- Search Results Window on page 75
- Help Window on page 75

These information windows provide the user with important and helpful details about operations performed in the application.

NOTICE: The tabs that appear are dependent on the current view of the application.

Expand and Auto Hide Information Windows

To expand information windows, click the relevant tab. The window automatically hides once the user clicks outside the window.

To pin the information window content to the application, select the horizontal **Auto Hide** pin icon in the upper right-hand corner of the window.

Dock or Float Information Windows

Once a window is pinned to the application, the user can dock the window to a dockable area of the application or allow the window to float anywhere on the screen. To dock a window, click and drag the window by the blue header section over a docking square and release. Docking squares appear in the application once the user drags a window.

To allow the window to float on the screen, simply drag, and drop the window to an area other than a docking square.

1.1.1.4.1
Analyze Results Window

The **Analyze Results** window displays any errors or warnings that are a result from a scheduled read or write job. When a read or write job is scheduled, the codeplug is compiled and all validations and dependencies are checked. If an error occurs, the job fails. Corrections to the configuration must be performed. The user can check for errors before scheduling a job by analyzing the radio. See Analyzing the Radio Configuration on page 72.

The following columns are available from the Analyze Results table:

Serial Number
The Serial Number of the radio that was selected as part of the job.

Configuration
Name of the Configuration that is assigned to the radio that is being analyzed.

Item Path
Path within the Configuration to the field containing the error. Double-click the error message and RM automatically navigate to the field either in the Configuration or in the Set.

Description
Description of the errors (if any).

Actions
Actions taken on the errors (if any).

To reset radios in one batch, click the **Reset All in One Radio** button.

NOTICE:
All the text in Analyze Results tab supports multiple languages based on the RMC setting.

The Analyze result does not auto-refresh; even when the user has fixed the errors or warnings. Perform the spell check operation again to confirm whether or not the changes made is reflected.

If there is an ongoing operation, RMC does not allow the user to perform another spell check operation. A spell check operation can have multiple items.

Starting a new operation will clear the results from the previous operation.

If the referred set is not added to the configuration, the item path is identified with a special flag. Motorola Solutions recommends to add the referred set to the configuration.

1.1.1.4.1.1
Analyzing the Radio Configuration

Radio configurations can be analyzed before a job is scheduled.

Procedure:

1. From **Radio View**, select the relevant radio or radios.
2. Right-click over the selected radio and select **Analyze**.

   NOTICE: The **Analyze** selection can also be opened by selecting the **Analyze** shortcut above the search field.
3. Expand the **Analyze Results** window by clicking on the **Analyze Results** tab along the bottom.

   Radios without errors display a green check icon.

   NOTICE: Any errors or warning are displayed under the **All** radio button. To view only errors, select the **Errors** radio button. To view only warnings, select the **Warnings** radio button.
   The user can launch Help for error related items by selecting the row with the error and pressing the F1 key.

1.1.1.4.2
Tasks Window

The **Tasks** window displays any background process that is performed in Radio Management (RM). Whenever a background process such as importing radios or a batch deletion is performed in RM, a task is created within the RM Server and information related to the task appears in the Tasks table.

The **Clear** button is used to delete all tasks listed in the Tasks table.

NOTICE: When the user double-clicks any row, additional details are displayed in the **Job View** window.
The contents of the **Tasks** window is cleared when the Radio Management Configuration Client is closed.

The following columns are available from the Tasks table:

Job Name
All jobs are given a default name. For example, the action to convert a radio from template to configuration mode creates a `Convert Template Mode Radio`. The customer can specify the name of some jobs, such as programming jobs.

Created Time
The date and time when the job started.

Summary
This column displays a progress bar while a Job is being processed. It also contains information regarding the number of items within the job.

Actions
While the job is processing, the **Actions** column contains a **Cancel** icon. Clicking the **Cancel** icon cancels the job.

1.1.1.4.3
Compare Results Window

The **Compare Results** window displays the differences between radio configurations, generated by the Compare Configuration feature.

NOTICE: The Compare Configuration feature can be performed from **Radio View** or **Configuration View**. See Compare Configurations on page 73 for details.

The comparison table displays the following columns:

Navigation Path
Displays the navigation path to the field.

Field Name
Displays the field name.

Source Value
Displays the value in the source configuration.

Target Value
Displays the value in the target configuration.

NOTICE: Selecting any linked value in the Source or Target columns redirects the user to the Set containing the field and places the focus on the field. For values that are not links, use the Navigation Path to manually locate the field within the configuration.

The **View by** radio buttons allow the user to display the following:

Radio Button	Description
All	Displays all fields with differences, missing values, and MVO field changes.
Different	Displays fields that contain different values
Missing	Displays fields that exist in one configuration but not in the other
MVO	Displays radio MVO (Model, Version, Option) fields that have changed from the MVO default value

1.1.1.4.3.1
Compare Configurations

The Compare Configurations feature allows the user to compare the codeplug values within two configurations.

The Compare Configuration feature can be performed in **Radio View** and in **Configuration View**.

Radio View

In **Radio View**, the following operations are supported:

Assigned Configuration
Compares the codeplug values from the currently assigned configurations.

Last Programmed
Compares the codeplug values from the configurations last programmed to the radio.

See Comparing Configurations in Radio View on page 135.

NOTICE: Comparison is not applicable for the following scenarios:

- When one of the radios is unread under **Radio View→Compare→Last Programmed...**.
- When one of the radios is not assigned to a configuration under **Radio View→Compare→Assigned Configuration...**
- When there are failed jobs under **Radio Detail View→Job History→Compare** for the selected radio.

Configuration View

In **Configuration View**, only the codeplug values of the selected configurations are compared using the **Compare Configuration** operation. Comparing configurations in **Configuration View** is useful for configurations not yet assigned to a radio.

NOTICE: When comparing configurations in **Configuration View**, certain radio specific fields are not available.

See Comparing Configurations in Configuration View on page 91.

1.1.1.4.4
Validation Results Window

The **Validation Results** window displays error conditions within the configuration.

NOTICE: The **Validation Results** window only appears when a Configuration is being edited.

NOTICE: Help for error-related items can be launched by selecting the row with the error and pressing the F1 key.

The following columns are available from the Validation Results table:

Path
Path within the Configuration to the field containing the error.

Error Code
An internal error code that identifies the error within the system.

Description
A description that provides details to the user as to the cause of the error.

Actions
When a curly icon (Reset Value) is displayed in the **Actions** column, the validation error can be automatically resolved by clicking the icon. The user is taken to the Set associated with the error. The field with the error is highlighted in red.

The **Reset All (For Selected Top Set)** button allows the user to reset all validation errors that found in the currently selected Top Set.

Before resetting the fields to a default value, the RMC will display the selected Top Set.

1.1.1.4.5

Warning Messages Window

The **Warning Messages** window will display warnings that occur in configurations. For example, if CPS 2.0 cannot paste a value to a radio parameter, a warning will be added listing the parameter that could not be pasted.

NOTICE: The **Warning Messages** window only appears when a Configuration is being edited.

1.1.1.4.6

Search Results Window

The **Search Results** window allows the user to search for fields and/or field values when editing Configurations. This search feature allows the user to quickly locate fields within a Configuration without having to know the Set.

NOTICE:
The **Search Results** window only appears when a Configuration is being edited.

To search for fields used within many Configurations or Radios, use the Data Mining feature in RM . See Manage Data Mining on page 92.

When editing a configuration, the user enters a word, phrase, or value in the **Search** field. The **x** to the right of the **Search** field is used to clear the search entry and the search results. The search icon ( ) is used to start the search. The drop-down arrow to the right of the **Search** field allows the user to select from the previous 10 searches.

The following options are used to refine the search:

Name
When selected, the text entered in the **Search** field is searched against the name of all fields.

Value
When selected, the number or text entered in the **Search** field is searched against the value of all fields.

Name and Value
When selected, both the field name and value are searched against the entry in the **Search** field.

Match whole word
When checked, the exact word, phrase, or value entered in the **Search** field is used to narrow the search results.

The following columns provide details of the search:

Path
The path to the field within the Configuration in Set Name\Field Name format.

Value
The current value for the field.

NOTICE: Double-clicking any row in the search results opens the relevant Set and places the focus on the field.

1.1.1.4.7

Help Window

The **Help** window is used to display context-sensitive help for fields used within Configurations and Sets.

NOTICE: The **Help** widow only appears when a Configuration is being edited.

When a user is editing a Configuration, help content is displayed in the **Help** window when a field is selected within the Set. Pressing the F1 key opens the full help system with the current selected field in focus.

1.1.2

Actions Menu

The **Actions** menu allows the user to quickly access the most common functions used to configure an Radio Management (RM) system. The **Actions** menu is selectable from any of the following views:

-
- Radio System View on page 142
- Job View on page 143

The selections available under the **Actions** menu are dependent on the current view.

The following windows and features are supported under the **Actions** menu:

1.1.2.1

Actions Menu Selections

Actions Menu Selections

The selections available under the Actions menu dependent on the current view in the Radio Management Configuration Client.

Menu Selection		Keyboard Shortcut	Function
New Radios		ALT+N	Adds a radio entry to the RM Server. See Adding Radios to Radio Management on page 80.
Import	Radios	Ctrl+I	Allows the user to add a radio entry to the RM Server database by importing a code-plug (.mc) file. See Importing Radios to Radio Management on page 82.
	File to Grid	Ctrl+H	Imports the minimum information about radios in order to perform Over The Air (OTA) read jobs. The default Comma-Separated Value (DEFAULT.csv) file can be found in the "samples" folder where Radio Management is installed. Use Notepad or Excel to add Serial Number, Radio ID, CAI, OTAP Authentication Key ID, and OTAP Authentication Key Value for each radio to be imported. See Importing File to Grid on page 83.
	Configurations	Ctrl_Shift+O	From **Configurations** view (**Manage→Configurations**), the user can im-

Menu Selection		Keyboard Shortcut	Function
			port an archived configuration file with a *.dbn extension. See Importing Configurations on page 84.
	Firmwares	Ctrl+Shift+M	From **Firmware** view (**Manage→Firmware**), the user can import a firmware package. See Importing Firmware on page 85.
	Voice Announcements	Ctrl+Shift+V	From the **Voice Announcement** view (**Manage→Voice Announcements**), the user can import a sound file with a *.mva or *.wav extension. See Importing Voice Announcements on page 85.
	Text To Speech	Ctrl+Shift+Q	From the **Text To Speech** view (**Manage→Text To Speech**), the user can import a text to speech file with a *.tts extension. See Importing Text To Speech Packs Manually on page 105.
	Language Packs	Ctrl+Shift+L	Opens the **Language Packs** view under the Resource view. The user must select the **Add** icon in the Programming pane to open the **Import Language Packs** dialog box where language packs are selected and added to the system. See Importing Language Packs on page 86.
Export	Radio	Ctrl+Shift+R	Exports the currently selected radio to an archive file (.xpba). The user must be in **Radio** view with one radio selected in the Programming pane to enable this menu selection. See Exporting Radio on page 86.
	Grid to File	Ctrl+Shift+S	Exports all of the data for the selected radios to an Excel spreadsheet (.xlsx) format file. The user must be in **Radio** view with one or more radios selected in the Programming pane to enable this menu selection. See Exporting Grid to File on page 87.
	GWCFG	Ctrl+Shift+N	Exports all of the MNIS data for the selected radios to a `*.gwcfgx` file format. The user must be in **Radio** view with one or more radios selected in the Programming pane to enable this menu selection in a Capacity Max system. See Exporting GWCFGX on page 87.
	Configuration	Ctrl+Shift+F	Exports the currently selected configuration to an archive file (.dbn). The user must be in **Configuration** view with one configuration selected in the Programming

Menu Selection			Keyboard Shortcut	Function
				pane to enable this menu selection. See Exporting Configuration.
Print	Print Preview		Alt+Shift+P	Allows the user to view a sample of the print output.
	Print		Ctrl+P	Allows the user to view a sample of the print the output.
Restore			Ctrl+R	Allows the user to roll back the codeplug of the selected radio to a previous version.
Reset Identifiers			Ctrl+Shift+I	Specifies the values that are used to communicate with the radio using the Over The Air (OTA) feature. The user must be in **Radio** view with one or more radios selected in the Programming pane to enable this menu selection. **NOTICE:** This feature should only be used when having trouble establishing communication with a radio.
Manage	Configurations		Alt+C	Switches the application to **Configuration View** and opens all the current configurations in the Programming pane.
	Sets		Alt+S	Switches the application to **Set View** and displays all supported Sets in the Navigation pane.
	Data Mining		Alt+D	Switches the application to the **Data Mining** view and displays all current queries created for the system. See Manage Data Mining on page 92.
	Licenses	Radio Licenses	Alt+R	Switches the application to **Radio License View** and displays all radios with licenses by region, feature name, and status that are active or available in the system. See Manage Radio Licenses View on page 98.
		Application Licenses	Alt+A	Switches the application to **Application License View** and displays all application licenses by region and status in the system. See Manage Application Licenses on page 99.
		Capacity Max Licenses	Alt+G	Switches the application to **Capacity Max License View** and displays all capacity max licenses in the system. See Manage Capacity Max System Server Licenses on page 99.
	Firmware		Alt+F	Switches the application to the **Resources View** and displays any firmware in the Programming pane.

Menu Selection		Keyboard Shortcut	Function
	Language Packs	Alt+L	Switches the application to the **Resources View** and displays any active language packs in the system within the Programming pane.
	Voice Announcements	Alt+V	Switches the application to the **Resources View** and displays all active voice announcement files in the system within the Programming pane.
	Text To Speech	Alt+E	Switches the application to the **Resources View** and displays all text to speech files in the system within the Programming pane.
	OTAP Keys	Alt+O	Switches the application to the **Resources View** and displays all active OTAP Keys in the system within the Programming pane.
	Privacy Keys	Alt+Y	Switches the application to the **Resources View** and displays all active Privacy Keys in the system within the Programming pane.
	RAS Keys	Alt+X	Switches the application to the **Resources View** and displays all active RAS Keys in the system within the Programming pane.
	Symmetric Keys	Alt+M	Switches the application to the **Resources View** and displays all active Symmetric Keys in the system within the Programming pane.
	Pre-Shared Keys	Alt+Shift+K	Switches the application to the **Resources View** and displays all active Pre-Shared Keys in the system within the Programming pane.
Advanced	Convert Template to Configuration	Alt+Shift+T	Opens the **Convert Template to Configuration** window. See Converting a Template to a Configuration on page 124.
Settings		Alt+E	Opens the **Settings** window. See Settings Window on page 124.
View tasks		Ctrl+T	Expands the **Tasks** tab at the bottom of the application.
Help		F1	Opens the full Radio Management 2 Online Help window.
About		Alt+B	Opens the **About** window and displays the current version of the application along with copyright details.

1.1.2.2

New Radio Window

The **New Radio** window allows the user to add a radio to the RM Server database.

The user must enter the serial number for the radio. All other radio-specific and system values are read from the radio when a Read job is scheduled. See Adding Radios to Radio Management on page 80.

The **New Radio** window is launched by selecting **Actions→New Radios** or by selecting the Add button in **Radio View**.

NOTICE: The **New Radio** window issues an error if the serial number exists in the database.

New Radio Window Fields

The following fields are available from the **New Radio** window.

Table 4: New Radio Window Fields

Field	Description
Serial Number	Unique alphanumerical number that identifies the radio. Each radio has a unique serial number. This is mandatory field and must be entered to read the radio.
Radio ID	This is an optional field that can be read from the radio once a read job is performed.
CAI	This value represents the Common Air Interface (CAI) network ID used by the radio. All radios must use the same CAI network ID to be able to exchange data. The default value of 12 is recommended. This is an optional field that can be read from the radio once a read job is performed.
Radio Alias	Name that is assigned to the radio that uniquely identifies it within the RM system. This is an optional field that can be read from the radio once a read job is performed.
Radio IP	This is an optional field that can be read from the radio once a read job is performed.
Read/Write Password	The read/write password field secures the radio data from being overwritten or deleted from the database. **NOTICE:** The characters appear as asterisk (*) while being entered. To verify the password that is being entered, click the small eye icon in the Password field. This is an optional field.

1.1.2.2.1

Adding Radios to Radio Management

Radios are added to Radio Management through the **New Radio** window in **Radio View**. See New Radio Window on page 79.

Prerequisites: Acquire the serial numbers for all radios being added to Radio Management.

When and where to use: Use this procedure to add new radios that are not archived or exists in the RM Server.

Procedure:

1 From **Radio View** , click the **Actions** menu and select **New Radios**.

2 From the **New Radio** window, enter the **Serial Number** for the radio.

3 Optional: If necessary, enter the following optional radio values:

- **Radio ID**
- **CAI** (Common Air Interface network ID)
- **Radio Alias**
- **Radio IP**
- **Region**
- **Read/Write Password**

NOTICE: SeeNew Radio Window Fields on page 80 for descriptions. All optional fields can be edited in **Radio View** once the radio is read into the database of the RM Server.

4 Click **OK**.

A new record (row) for the radio is added to **Radio View**.

5 Schedule a read job to import all radio-specific and system values. Perform the following actions:

NOTICE: The following procedure is an example. For additional settings in the **Schedule Job** window, see Scheduler in Radio Management on page 128.

a Select the **radio** from the list of radios.

b Click the **Scheduler** button to open the **Schedule Job** window.

c From **Job Type**, select **Read**.

d Click the **Generate configuration** box to transfer radio data into a configuration.

e In the **Job Name** field, enter a relevant name for the read job.

f To schedule the job to run once the radio is connected, click **OK**.

The **Job Status** column for the radio reads, `Running.WaitingForDP`. Once the radio is connected to the RM system and the serial number is authenticated, the RM Device Programmer (DP) initiates the job. Once the read job is successful, the **Job Status** column reads, `Completed`.

1.1.2.3
Import Selections

The selections under the **Import** menu allow the user to import archived data to assist in the configuration of the RM system.

The following selections under the **Import** menu are launched by selecting **Actions→Import** and then the relevant selection:

Table 5: Import Menu Selections

Selection	Required View	Description
Radios	Radio View	Clicking this menu launches the **Import Radios** window. See Importing Radios to Radio Management on page 82.
File to Grid	Radio View	Clicking this menu launches the **Import File to Grid** window. See Importing File to Grid on page 83.
Configuration	Configuration View	Clicking this menu launches the **Open** window to browse to the storage folder for the codeplug archive file(s) to be added to the RM Server. See Importing Configurations on page 84.
Firmwares	Resource View - Firmware	Clicking this menu imports the available Firmware Package(s) from the install folder to the RM Server. See Importing Firmware on page 85.
Voice Announcements	Resource View - Voice Announcement	Clicking this menu launches the **Open** Window to browse to the storage folder for Voice Announcement file(s) to be uploaded to the RM Server. See Importing Voice Announcements on page 85.
Text To Speech	Resource View - Text To Speech	Clicking this menu launches the **Open** Window to browse to the storage folder for Text to Speech to be uploaded to the RM Server. See Importing Text To Speech Packs on page 85.
Language Packs	Resource View - Language Packs	Clicking this menu launches the window with available Language Packs in the install folder to be uploaded to the RM Server. See Importing Language Packs on page 86.

NOTICE: Resource View is displayed by selecting **Actions→Manage** and then selecting **Firmware**, **Voice Announcements**, **Text To Speech**, or **Language Packs**.

1.1.2.3.1

Importing Radios to Radio Management

This feature allows the user to add radios to the RM Server database from archived codeplug files.

NOTICE: Radios can only be imported in **Radio View**.

Procedure:

1 From **Radio View**, select **Actions→Import→Radio**.

NOTICE: The **Import Radio** window can also be opened by pressing CTRL+I or by clicking on the **Import** operational button above the table in the programming pane.

2 From the **Import Radios** window, browse to the storage location that contains the codeplug archive files and perform one of the following:

- For older codeplug archives, select **Single Unit File (*ctb)** from the file type drop-down list.
- For codeplug files exported from Radio Management, select **Codeplug Byte Array (*xpba)** from the file type drop-down list.

NOTICE: By default, the **Codeplug Byte Array (*.xpba)** is the selected file type.

3 Select the relevant archive file or files.

NOTICE: Use the CTRL key (selective) or the SHIFT key (range) to select multiple files.

4 Click **Open**.

The **Import Radios** dialog box opens.

5 From the **Import Radios** dialog box, select **Create radios**.

6 Optional: Select **Create configurations** to import the radio data into a Configuration and Set structure.

NOTICE: Select **Apply configurations to radios** to assign the created configuration to the radio.

7 To override the existing radio, click **Always override**. Otherwise, select **Never Override**.

8 Optional: In the **Password** field, enter the password assigned to the radio codeplug.

NOTICE:
The characters appear as asterisk (*) while being entered. To verify the password that is being entered, click the small **eye** icon in the **Password** field.

When importing multiple radios, an **Advanced** button appears. Selecting **Advanced** allows the user to enter a password for each radio.

9 Click **Import**.

The radio is added to the RM Server database and listed in the table in **Radio View**.

NOTICE:

- When a codeplug file is imported and its serial number already exists in the RM Server database, the previous configuration for that radio is overwritten when the **Always override** option is selected.
- A archive history of radios based on scheduled read/write jobs is always maintained in the database, unless a radio is deleted from the RM Server's database.
- By default, the codeplug filename is used as the Configuration name in **Radio View**. The Configuration name can be renamed from **Configuration View**.

1.1.2.3.2
Importing File to Grid

This feature allows the user to import radio codeplug data from a comma-delimited ***.csv** file or a spread sheet ***.xlsx** file.

Codeplug data that is exported from Radio Management (see Export Window on page 86) can be modified in a spread sheet program and saved as a **.csv** file (using the **Save As** command).

NOTICE: Comma-delimited ***.csv** files or spread sheet ***.xlsx** files can only be imported in **Radio View**.

Procedure:

1 From **Radio View**, select **Actions→Import→File to Grid**.

NOTICE: The **Import File to Grid** window can also be opened by pressing CTRL+H.

2 From the **Import File to Grid** window, browse to the storage location that contains the codeplug archive files and perform one of the following:

- For CSV (comma-delimited) files, select **CSV (comma-delimited) (*.csv)** from the file type drop-down list.
- For spread sheet files, select **XLSX files (*.xlsx)** from the file type drop-down list.

NOTICE: By default, the **CSV (comma-delimited) (*.csv)** is the selected file type.

3 Select the relevant file or files.

NOTICE: Use the CTRL key (selective) or the SHIFT key (range) to select multiple files.

4 Click **Open**.

NOTICE: The progress and summary of the import operation can be viewed by clicking the **Tasks** tab at the bottom of the client window. See Tasks Window on page 72.

If successful, the radios are added to the currently selected group. See Grouping radios within the The Radio Management (RM) Server on page 144.

1.1.2.3.3
Importing Configurations

This feature allows the user to import configuration files from the **Configuration View**.

Procedure:

1 From the **Actions** menu, select **Manage→Configurations** to open the **Configuration View** window.

2 Select **Actions→Import→Configurations**.

NOTICE: The **Import Configurations** window can also be launched by clicking on the **Import** button.

3 From the **Import Configurations** window, select the relevant **.dbn** files.

4 Click **Open**. The **Import Configuration** dialog box appears.

5 Type in a relevant name in the **Suffix for Sets** field.

6 Click **OK**.

1.1.2.3.4

Importing Firmware

This feature allows the user to import firmware packages from the **Resource View for Firmware**.

Procedure:

1. From the **Actions** menu, select **Manage→Firmwares** to open the **Resource View for Firmware** window.
2. Select **Actions→Import→Firmwares**.

   NOTICE: The **Import Firmware** window can also be launched by clicking on the **Add** button.
3. From the **Import Firmware** window, select the relevant firmware.
4. Click **Open**.

   The firmware is imported to the RM Server.

1.1.2.3.5

Importing Voice Announcements

This feature allows the user to import voice announcement files from the **Resource View for Voice Announcements**.

Procedure:

1. From the **Actions** menu, select **Manage→Voice Announcements** to open the **Resource View for Voice Announcements** window.
2. Select **Actions→Import→Voice Announcements**.

   NOTICE: The **Import Voice Announcements** window can also be launched by clicking on the **Import** button.
3. From the **Import Voice Announcements** window, select the relevant **.mva** or **.wav** files.
4. Click **Open**.

1.1.2.3.6

Importing Text To Speech Packs

This feature allows the user to import Text To Speech package files from the **Resource View for Text To Speech Packs**. The **Resource View for Text To Speech Packs** is launched from the **Actions** menu by selecting **Manage→Text To Speech Packs**.

Procedure:

1. From the **Actions** menu, select **Manage→Text To Speech** to open the **Resource View for Text To Speech Packs** window.
2. Select **Actions→Import→Text To Speech**.

   NOTICE: The **Import Text To Speech Pack Files** window can also be launched by clicking on the **Add** button.
3. From the **Import Text To Speech Pack Files** window, select the relevant **.ttspa** files.
4. Click **Open**.

   The Text To Speech package file is imported to the RM Server.

1.1.2.3.7
Importing Language Packs

This feature allows the user to import the language packs from the **Resource View for Language Packs**. The **Language Packs Resource View** is launched from the **Actions** menu by selecting **Manage→Language Packs**.

Procedure:

1. From the **Actions** menu, select **Manage→Language Packs** to open the **Resource View for Language Packs** window.
2. Select **Actions→Import→Language Packs**.

   NOTICE:

   The **Import Language Packs** window can also be launched by clicking on the **Add** button.
3. From the **Import Language Packs** window, select the relevant **.tts** file.
4. Click **Import**.

   The language packs file is imported to the RM Server.

1.1.2.4
Export Window

The selections under the **Export** menu allows the user to export radio data to various file types.

The following selections under the **Export** menu are launched by selecting **Actions→Export**.

Table 6: Export Menu Selections

Column	Description
Radios	Clicking this menu launches the **Export Radios** window. See Exporting Radio on page 86.
Grid to File	Clicking this menu launches the **Export Grid to File** window. See Exporting Grid to File on page 87.
GWCFG	Clicking this menu launches the **Export GWCFG** window. See Exporting GWCFGX on page 87.
Configuration	Clicking this menu launches the **Export Configuration** window. See Exporting Configuration on page 88.

1.1.2.4.1
Exporting Radio

This feature allows the user to export a radio from **Radio View**.

Prerequisites: These selections are only available when accessed from the **Radio View**.

Procedure:

1. Select one or more radios from the table.
2. From the **Radio View**, select **Actions→Export→Radio** to open the **Export Radio** window.

   Alternatively, enter `Ctrl+Shift+R`.

3 From the **Export Radio** window, browse and select a file location.

4 Enter a name for the Codeplug Byte Array (**.xpba**) file.

5 Click **Save**. The **Export Radios** dialog box appears.

The radio is exported successfully.

6 Click **OK**.

1.1.2.4.2
Exporting Grid to File

The **Grid to File** selection allows the user to export all selected radios from **Radio View** into a comma delimited (*.csv) file that can view by a spread sheet application. The exported CSV file contains the same data that is represented in **Radio View**.

Procedure:

1 Select one or more radios from the table.

2 From the **Radio View**, select **Actions→Export→Grid to File** to open the **Export Grid to File** window.

Alternatively, enter `Ctrl+Shift+S`.

3 From the **Export Grid to File** window, browse and select a file location.

4 Enter a name for the **.csv** file.

5 Click **Save**. The **Export Grid to File** dialog box appears.

The **.csv** file is exported successfully.

6 Click **OK**

1.1.2.4.3
Exporting GWCFGX

This feature allows the user to export configuration files from the **Configuration View**. The **Configuration View** is launched from the **Actions** menu by selecting **Manage→Configuration**.

Procedure:

1 From the **Actions** menu, select **Manage→Configurations** to open the **Configuration View** window.

2 Select the entry for MNIS and right click the row.

3 Select **Export→GWCFGX**.

4 From the **Export GWCFGX** window, browse and select a file location.

5 Enter a name for the excel file(**.xml**).

6 Save the MNIS settings to a **.gwcfgx** file that can be imported to the PC running the Data Gateway.

7 Click **Save**. The **Export GWCFGX** dialog box appears.

The CWCFGX file is exported successfully.

8 Click **OK**.

1.1.2.4.4
Exporting Configuration

This feature allows the user to export one or more configurations from the **Configuration View**.

Procedure:

1. From the **Actions** menu, select **Manage→Configurations**.
2. To export a single configuration, perform the following actions:
   a. Select the relevant row.
   b. Right-click the selected row and select **Export Configuration**.
   c. From the **Export Configuration** window, browse and select a folder.
   d. Enter a name for the configuration file.
   e. Click **Save**.
3. To export multiple configurations, perform the following actions:
   a. Select the first row.
   b. Press and hold the **CTRL** key.

      NOTICE: To select consecutive rows, press and hold the **SHIFT** key.

   c. Select one or more additional rows.
   d. Right-click the selected rows and select **Export Configuration**.
   e. Browse and select a folder location.

      NOTICE: Since the selected configuration files will be saved to the selected folder location, it is recommended to create a new folder to help organize the exported files.

   f. Click **OK**.

1.1.2.5
Print Window

The **Print** window allows the user to print the contents of the **Radio View**.

The **Print** window is launched by selecting **Actions→Print→Print**.

1.1.2.5.1
Print Preview Window

The **Print Preview** window allows the user to view a sample of the print output. The print preview displays all the radios that are currently listed in the table while in **Radio View**.

The **Print Preview** window is launched by selecting **Actions→Print→Print Preview**.

The following operations are supported:

- Print (Ctrl+P)
- Increase the size of the content (Ctrl+=)
- Decrease the size of content (Ctrl+-)
- Display 100% (Ctrl+1)
- Page Width (Ctrl+2)
- Whole Page (Ctrl+3)
- Two Page (Ctrl+4)

1.1.2.6

Restore Window

The **Restore** window allows the user to roll back the codeplug of the selected radio to a previous version.

The **Schedule Job** window is automatically opened and allows the user to schedule a write job. If the user cancels the job, the radio returns to the state it was before this window was opened.

NOTICE: Restore capability is based on the current Firmware version of the radio being backward compatible to the archived Codeplug.

1.1.2.6.1

Launching the Restore Window

When and where to use:
To launch the **Restore Window**, follow these steps:

Procedure:

1. From the **Radio Details View**, select a completed job.
2. Right click the grid.

1.1.2.7

Reset Identifiers Window

The Reset Identifiers window allows the user to enter the Read/Write password that is required when a radio's codeplug is password protected.

Codeplug passwords are determined on a per codeplug basis from RM's Read/Write Password feature.

NOTICE: This feature is only available from Radio View when a radio is selected.

1.1.2.8

Manage Configurations

The management of configurations allows the user to define the configurations that will be created and stored in the Radio Management (RM) Server.

Configuration View is launched from the **Actions** menu by selecting **Manage→Configurations**.

NOTICE: Configurations that are assigned to a device cannot be deleted from the RM Server. The user must first select a different Configuration for the device in Radio View before it can be deleted from the RM Server.

From **Configuration View**, the user can perform the following basic operations:

- **Edit**
- **Add**
- **Delete**

  NOTICE: The **Delete** icon removes configurations from the RM Server database that are not assigned to a device.

- **Import**

- **Export**

Configuration Management

Table 7: Configuration View Table Columns

Column	Description
Name	Allows the user to view and modify the name for the configuration. A configuration must have a unique name. A modified configuration name appears in all tables where used.
Product Family	Displays the general name for all similar products.
Last Modified Date	Displays the actual Date and Time that when the configuration was last modified.
Radios	Displays the number of radios assigned to the configuration.
Comments	Allows the user to add comment for the configuration.

Right-click Menu Option

The following right-click menu selections are available when a configuration is selected and the user right-clicks on the selected configuration:

Table 8: Configuration View Right-click Selections

Column	Description
Edit	This selection allows the user to edit all Sets that are assigned to the Configuration.
Delete	This selection is only available when the selected Configuration is not assigned to a radio.
Compare Configuration	**NOTICE:** This selection is accessible when two configurations are selected.
Copy Configuration	This selection opens the **Copy Configuration** window and allows the user to duplicate the selected Configuration. From the **Copy Configuration** window, the user can rename the Configuration and add a suffix that is appended to each Set in the Configuration.
Show Related Radios	This selection opens the **Related Radios** window and displays all radios stored in the RM Server that are currently using the selected Configuration.
Export Configurations	This selection allows the user to export the Configuration to a local drive or network drive as a binary data (*dbn) file.

1.1.2.8.1
Creating Configurations

Configurations are assigned to devices in Radio View and contain all the necessary parameters within a logical grouping of fields called Sets.

Procedure:

1. From the **Actions** menu ( ), select **Manage→Configurations** to open **Configuration View**.
2. Select the **Add** icon ( ) to add a Configuration.
3. From the **New Configuration** window, select the relevant **Product Family**.
4. Assign a unique **Name** to the Configuration.
5. Optional: Enter a **Comment** that best describes the purpose of the Configuration.
6. Click **Save**.

1.1.2.8.2

Comparing Configurations in Configuration View

The comparing of configurations allows the user to validate field values within a relevant configuration before scheduling a job.

When and where to use: This procedure compares all fields within the configurations and displays all fields that have different values.

NOTICE: When comparing configurations in **Configuration View**, certain radio specific fields are not available.

Procedure:

1. From **Radio View**, select **Actions→Manage→Configurations**
2. Select the first configuration (source) to compare.
3. Hold down the CTRL key on the keyboard and select the second configuration (target) to compare.
4. Right-click over any of the selected configurations and select **Compare Configuration**.
5. Click the **Compare Results** tab to expand the **Compare Results** informational window.

   The differences between the source configuration and target configuration are displayed.

   NOTICE: Filter the differences by using the View by: **All**, **Different**, **Missing**, or **MVO** options.
   To navigate to the field, click a linkable value.

1.1.2.9

Manage Sets

The management of Sets allows the user to create a list of sets, stored in the RM Server, that can be used to assign to a configuration.

The **Set View** is launched from the **Actions** menu by selecting **Manage→Sets**.

NOTICE: Only **Voice Announcement** and Capacity Max feature sets such as **Capacity Max Systems**, **Capacity Max Site Selection**, and **Capacity Max Radio Wide Features** are available to be managed.

From **Set View**, the user can perform the following basic operations:

- **Edit**
- **Add**

- **Delete**

  NOTICE: The **Delete** icon removes sets from the RM Server database that are not assigned to a configuration.

- **Import**
- **Export**

Right-click Menu Option

The following right-click menu selections are available when a Set is selected and the user right-clicks on the selected Set:

Table 9: Set View Right-click Selections

Column	Description
Edit	This selection allows the user to edit the fields for the selected Set.
Delete	This selection is only available when the selected Set is not assigned to a Configuration.
Copy Set	This selection opens the **Copy Set** window and allows the user to duplicate the selected Set. From the **Copy Configuration** window, the user can rename the Set and perform one of the following options: **Make a copy of this Set** This option duplicates the selected Set. **Make a copy of this Set and assign to all related Configurations** This option duplicates the Set and assigns it to all Configurations currently using the selected Set.
Show Related Sets	This selection opens the **Related Sets** window and displays all Sets stored in the RM Server that are currently using the selected Set.
Show Related Configurations	This selection opens the **Related Configurations** window and displays all Configurations stored in the RM Server that are currently using the selected Set.

1.1.2.10

Manage Data Mining

The Data Mining feature in Radio Management (RM) allows the user to locate specific fields with values used within Sets, Configurations, and Radios.

The user can create simple or advanced queries that help identify where certain fields are being used. Data mining is launched from the **Actions** menu by selecting **Manage→Data Mining**.

From the main data mining view, the user can **Add**, **Edit**, **Delete**, or **Export** queries. Queries are exported to a comma delimited CSV file.

Table 10: Data Mining Table

Column	Description
Query Name	Displays the names of queries created for data mining.

Column	Description
Search For	Displays the object that is the focus of the query search. The available objects are Configuration, Radio, and Set.
Group Query	A collection of unique queries. Useful for sorting queries.
Last Modified Data	Displays the date and time that the query was last modified.
Comments	Allows the user to enter a comment to help identify the purpose of the query.

1.1.2.10.1

Data Mining Query Window

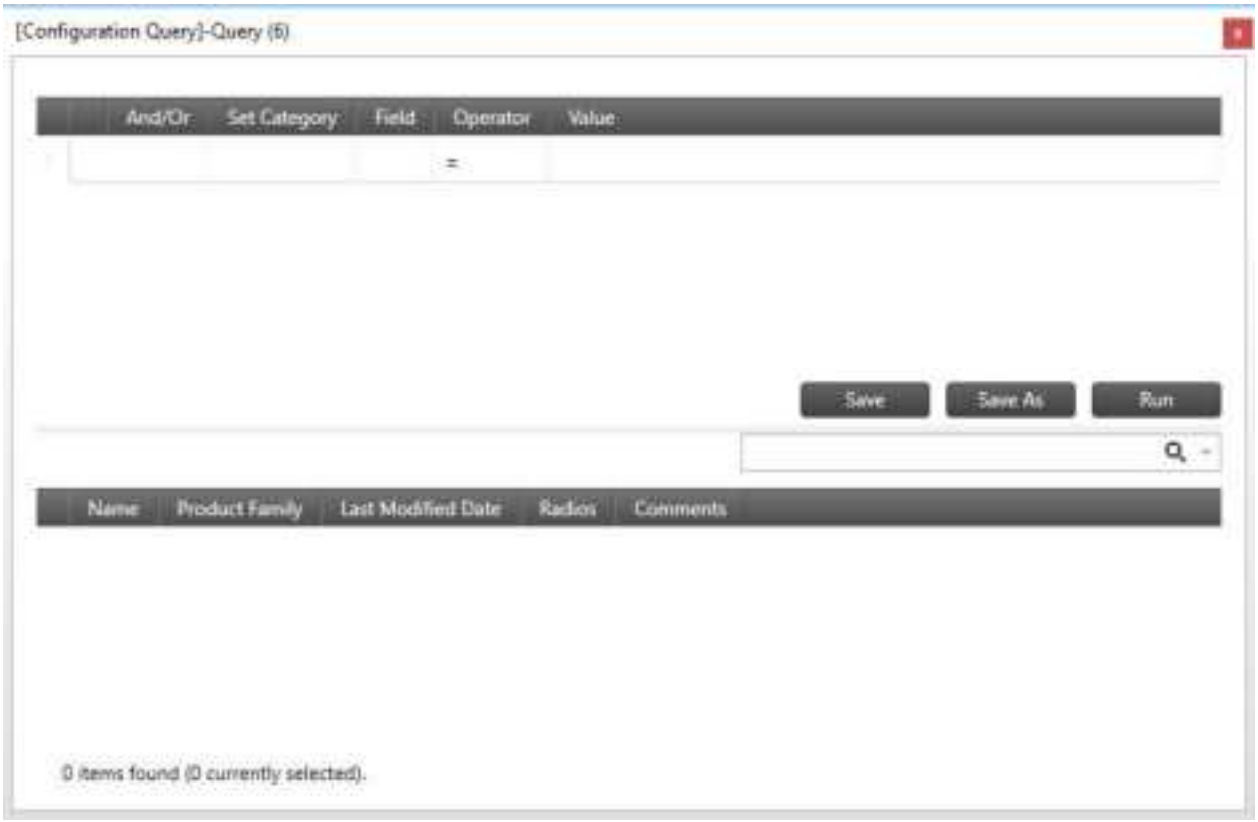
The **Query** window allows users to build simple and advanced queries that can be ran and shared within an RM system.The user adds new queries to the Data Mining window by clicking the **Add** button.

Figure 3: New Query Window

The **New Query** window allows the user to search for fields (fields) used in a **Configuration**, **Radio**, or **Set**.

Once the **Search For** query type is selected, the main **Query** window opens. The heading of the main query window displays the selected query type.

Figure 4: Main Query Window



The columns in the upper half of the window are used to build the clauses for the query.

Table 11: Query Clause Columns

Column	Function
And/Or	The **And/Or** operators are used to filter the results from one or more clauses. The **And** operator displays a result when the conditions for all clauses are true. The **Or** operator displays a result when at least one of the clauses is true. These operators are only valid for queries using more than one clause.
Set Category	This drop-down list is used to select a Set Category. Set Categories are a grouping of fields.
Field	This drop-down list is used to select a field contained within the selected Set Category.
Operator	This drop-down list is used to select a search query operator. The supported operators are as follows: • Contains • <= • < • >= • > • Does not contain

Column	Function
	• < > The list of available operators is dependent on the selected field.
Value	This field defines the value used in the query expression for the selected Field. The value can be true/false, numeric, or drop-down selection.

The columns in the lower half of the window are used to display the results for the executed query. The columns that are displayed are dependent on the query type selected. The results can be sorted by clicking on a column heading.

Table 12: Query Results Columns

Query Type	Columns Displayed
Configuration	Name / Product family / Last Modified Date / Radios / Comments
Radio	Serial Number / Radio Alias / Model Number / Comments
Set	Set Name / Last Modified Date / Comments

1.1.2.10.2

Adding a Query for Data Mining

Queries allow the user to identify where a field, containing a specific value, is used.Queries are created by adding one or more clause expressions. Simple queries can be created to locate a single field. More advanced queries can be created to locate multiple fields.

When and where to use:
Use this procedure to build queries to locate fields within Configurations, Sets, or Radios.

Once queries are created, the user can perform the following operations:

- Grouping Queries in Data Mining on page 97
- Deleting a Query Clause on page 96

Procedure:

1. Click the **Actions** menu and select **Manage→Data Mining**.
2. From the **Data Mining** view, click the **Add** button.
3. From the **New Query** window, select **Configuration**, **Radio**, or **Set** from the Search For drop-down list.
4. Click **OK**.
5. From the **Query** window, create a query as follows:

If…	Then…
If creating a query for a single clause,	perform the following actions: **a** Click under the **Set Category** column and select the relevant **Set**. **b** Click under the **Field** column and select a **field** for the selected Set Category. **c** Select an **Operator**. See Table 11: Query Clause Columns on page 94 for a listing of operators. **d** Enter or select a **Value** for the selected **Field**.

If…	Then…
If creating a query for multiple clauses,	perform the following actions: **a** After creating the first clause, right-click anywhere in the top-half and select **Add new Clause**. By default, the new clause is And to the previous clause. **b** From the **And/Or** drop-down list, select the relevant operator. **c** Select a **Set Category**. **d** Select a **Field** for the selected Set Category. **e** Select an **Operator**. **f** Enter or select a **Value** for the selected **Field**.

6 Click **Save** or **Save As** to assign a name for the query.

7 Click **Run** to initiate the query search.

If the query produces no results, `Data mining completed, but no matching data` appears to the right of the **Save** button. Otherwise, the resulting matches appear in the lower half of the window.

1.1.2.10.2.1

Grouping Query Clauses

The grouping of clauses allows the user to combine multiple clauses into a single expression. Clause expressions can be grouped when the query is first created or by editing an existing query.

When and where to use: Use this procedure to group clause expressions in a query.

NOTICE: Queries and clause expressions are selected by hovering the cursor to the left of the relevant row and clicking the left mouse button.

Procedure:

1 Select a query from the **Data Mining** view and click the **Edit** button.

2 Select the first clause in the query to group.

The clause row is highlighted when selected.

3 Hold the CTRL key and select the second clause.

4 Right-click over the selected clauses and select **Group Clauses**.

A vertical bracket appears to the left of the grouped clause.

NOTICE: To delete a grouping, select all the clause in the group, right-click, and select **UnGroup Clauses**.

1.1.2.10.2.2

Deleting a Query Clause

The deletion of a clause expression within a data mining query can be perform while building the query or when modifying existing queries.

When and where to use: Use this procedure to delete a clause expression in a query.

NOTICE: Queries and clause expressions are selected by hovering the cursor to the left of the relevant row and clicking the left mouse button.

Procedure:

1. Click the **Actions** menu and select **Manage→Data Mining**.
2. Select the relevant query and click the **Edit** button.

   The user can also right-click over the selected query and select **Edit Query**.
3. Select the clause expression, then right-click and select **Delete Clauses**.
4. From the **Data Mining** view, click the **Add** button.
5. If applicable, modify the query further, save it, or run the query.

1.1.2.10.3
Deleting a Query from Data Mining

The deletion of a queries from data mining allows the user to maintain current and update queries used for data mining.

When and where to use: Use this procedure to delete queries from data mining.

NOTICE: Queries are selected by hovering the cursor to the left of the relevant row and clicking the left mouse button. Hovering over the initial column in the table changes the cursor from a standard pointer to a hand pointer.

Procedure:

1. Click the **Actions** menu and select **Manage→Data Mining**.
2. From the **Data Mining** view, select one or more queries from the table.

   NOTICE: The **Edit** and **Delete** buttons are grayed out until a query is selected.
3. Click the **Delete** button.
4. Click **Yes** to delete the query or **No** to cancel the operation.

   NOTICE: Once the deletion operation is performed it cannot be undone.

1.1.2.10.4
Grouping Queries in Data Mining

The grouping of queries allows the user to organize queries in unique collections. Query groups must first be created before they can be assigned to queries.

When and where to use: Use this procedure to group one or more queries into a unique collection.

NOTICE: Queries are selected by hovering the cursor to the left of the relevant row and clicking the left mouse button. Hovering over the initial column in the table changes the cursor from a standard pointer to a hand pointer.

Procedure:

1. Click the **Actions** menu and select **Manage→Data Mining**.
2. From the **Data Mining** view, right-click in the navigation pane and select **New Query Groups**.
3. Rename the new query group. Perform the following actions:

   a Select the query group.

b Right-click and select **Rename**.

c Enter a new name for the query group and press ENTER.

NOTICE: Query groups can also be renamed by double-clicking the query group and entering a new name.

4 Click **All Query Groups** to see all the existing queries to the right of the navigation pane.

5 Under the **Query Group** column, select the drop-down list and choose a query group for the query.

6 Repeat step 5 until all queries are added to the group.

NOTICE: Selecting the group query in the navigation pane displays only those queries that were added to the group. Selecting **All Query Groups** at anytime displays all queries in the system.

1.1.2.11

Manage License

The Manage License feature allows a user to add additional radios to the RM System.

User can purchase the RM feature through the Motorola Solutions Online (MOL) website. If the purchase is successful, an Entitlement ID (EID) is provided. With this feature, the user specifies the number of radios they want to manage. The radio count associated with each EID is divided across multiple instances of the RM Server.

Manage License is launched from the **Actions** menu by selecting **Manage→Licenses**.

From each Licenses view, the user can **Add** , **Edit** , or **Delete** radios.

The following license types can be managed in Radio Management:

1.1.2.11.1

Manage Radio Licenses View

Manage Licenses allows the user to add more radios to the Radio Management (RM) System. The user can purchase the RM feature through the Motorola Solutions Online (MOL) website. If the purchase is successful, an Entitlement ID (EID) is provided. With this feature, the user can specify the number of radios that the user wants to manage. The radio count associated with each EID is divided across multiple instances of RM Server. Radio License view is launched from the **Actions** menu by selecting **Manage→Licenses→Radio Licenses**.

Table 13: Radio Licenses

Column	Description
Serial Number	Allows the user to view-only the Serial Number of the radio for all licensed features. Serial Numbers are read from codeplugs.
Radio Alias	Allows the user to view-only the radio-user recognizable name of the radio for all licensed features. This field is only modifiable from the **Radio View**.
Model Number	Allows the user to view-only the Model Number of the radio for all licensed features. Model Numbers are read from codeplugs.
Region	Allows the user to view-only the region of the radio for all licensed features.
Feature Name	Allows the user to view-only the Feature's name. In this case the Feature Name is read from the actual license.
Status	Allows the user to view-only the status of all radio licenses.

Column	Description
Com-ments	The user can add any short description about this radio license row.

1.1.2.11.2

Manage Application Licenses

Application Licenses are features that apply to all the radios in the RM system. **Application License** view is launched from the **Actions** menu by selecting **Manage→Licenses→Application Licenses**.

Table 14: Application Licenses

Column	Description
Name	Displays the name of the feature.
Region	Displays the supported region for the application license.
Status (Capacity/ Used)	Displays the current status of the application licenses. The **Capacity** category represents the maximum number of radios that can be assigned. While the **Used** category displays the current number of radios assigned.
Comments	Allows the user to add a comment for the application license.

1.1.2.11.3

Manage Capacity Max System Server Licenses

This window allows the user to submit software license assignment. The **Capacity Max System Server License View** window presents a view containing an interface for entering Entitlement IDs (EIDs).

The **Capacity Max License View** is launched from the **Actions** menu by selecting **Manage→Licenses→Capacity Max System Server Licenses**.

The user can use the **Filter by:** radio buttons to view **All**, **Features**, or **System Server** licenses that meet the criteria of the EID license.

Table 15: Register Capacity Max System Server License

Column and Buttons	Description
Entitlement ID text box	For the user to type in the EID to be queried.
Query button	Clicking this button displays the EID information in the table.
Clear All button	Clicking this button deletes previously-queried EIDs.
Serial Number	Allows the user to view-only the serial number of the device.
System Server Alias	Displays and allows the direct editing of a system server's System Name.
Add button	Clicking this button adds the selected device from the Available Controllers table to the Selected Controllers table.
Remove button	Clicking this button removes the selected device from the Selected Controller table and back to the Available Controller table.
Register button	Click this button to register the features selected in the Query ID table to the devices in the Selected Controller table.

Column and Buttons	Description
Close button	Click this button to close the Register Capacity Max License window.

1.1.2.12
Manage Firmware

The **Manage Firmware** feature allows the user to view automatically-imported versions of firmware stored in the Radio Management (RM) Server.

Each time a radio is added to RM, its firmware version is automatically added if its not currently stored in the RM Server. The newly added radios are then available to other managed radios. See Adding Radios to Radio Management on page 80.

Manage Firmware is launched from the **Actions** menu by selecting **Manage→Firmware**.

The user can **Import** , or **Delete** firmware.

Table 16: Firmware

Column and Buttons	Description
Name	Allows the user to only view the name of all available firmware versions.
Version	Allows the user to only view the version number of all available firmware versions.
Size (KB)	Allows the user to only view the file size of all firmware versions.
Imported Date	Allows the user to only view the actual Date and Time that all firmware versions were imported.
Codeplug	Allows the user to only view the name of the codeplug version.
In-Use Radios	Allows the user to only view the number of radios using each firmware file.
In-Use Radios (Template Mode)	Displays the number of templates using each firmware file in Template Mode.
In-Use Radios (Configuration Mode)	Displays the number of radios using each firmware file in Configuration Mode.
Comments	Allows the user to add comments on a per firmware file basis.

1.1.2.13
Manage Packages

The **Manage Packages** feature allows the user to view the package files stored in the RM Server.

The user must manually import all package files because the RM Server does not automatically adds the package file version each time a radio is read into the RM. After the package file version is added and stored in the RM Server, the package file version is available to other managed radio. See Adding Radios to Radio Management on page 80. The RM Server delivers one package file (.zip file) to the radio.

Manage Packages is launched from the **Actions** menu by selecting **Manage→Packages**.

The user can **Import** , or **Delete** packages.

Table 17: Packages

Included Columns and Button	Definition
Name	Allows the user to view-only the name of all available manifest/package file.
Manifest Version	Allows the user to view-only the version number of all available manifest file.
Version	Allows the user to view-only the version number of all available package file.
Description	Allows the user to view-only the version number of the manifest/package file in the imported package.
Size (KB)	Allows the user to view-only the file size of all manifest/package file.
Imported Date	Allows the user to view-only the actual Date and Time that all manifest/ package file were imported.
In-Use Radios	Allows the user to view-only the number of radios using each manifest/ package file.
Comments	Allows the user to add comments on a per manifest/package file basis.

1.1.2.14

Manage CA Certificates

The **Manage CA Certificates** feature allows the user to view automatically imported CA Certificates stored in the RadioCentral Server, and to manually import new CA Certificates to the RadioCentral Server.

Manage CA Certificates is launched from the **Actions** menu by selecting **Manage→CA Certificates**.

The user can **Import** , or **Delete** certificates.

NOTICE:

- CA Certificates cannot be automatically or manually imported when a file name match exists in the RadioCentral server.
- Only CA Certificate files that are Privacy Enhanced Mail (PEM) formatted, and 10K or less in size can be imported into the RadioCentral Server.

There are two methods of storing CA Certificates files to the RadioCentral Server:

Automatic Import

Each time a radio is added to the RadioCentral Server, the CA Certificates files are automatically added if not currently stored in the RadioCentral Server. The CA Certificates files are then available to other managed radios.

Manual Import
Using the Import CA Certificates files option. See Importing CA Certificates Manually on page 102.

Table 18: Certificates

Included Columns and Button	Definition
Name	Allows the user to view-only the name of all available certificates.
Size	Allows the user to view-only the file size of all certificates.
Imported Date	Allows the user to view-only the actual Date and Time that all certificates were imported.
In-Use (Radios)	Allows the user to view-only the number of radios using each certificates file.
Comments	Allows the user to add comments on a per certificates file basis.

1.1.2.14.1
Importing CA Certificates Manually

Import CA Certificates Files allows the user to import new versions of CA Certificates files to the RadioCentral Server.

When and where to use: Use this procedure to import CA Certificates files.

Procedure:

1. From the **Actions** menu, select **Manage→CA Certificates** to open the **Resource View CA Certificates** window.
2. Click the **Import** button.
3. From the **Import CA Certificates** window, select the relevant ***.*** file.

   The size of the CA certificate must not exceed 10K and must be Privacy Enhanced Mail (PEM) formatted. CA Certificates cannot be automatically or manually imported when a file name match exists in the RadioCentral server.
4. Click **Open**.

1.1.2.15
Manage Language Packs

The **Manage Language Packs** feature allows the user to view automatically imported Language Packages files stored in the RM Server and to manually import new versions of Language Packs to the RM Server.

Manage Language Packs is launched from the **Actions** menu by selecting **Manage→Language Packs**.

The user can **Add** , **Edit** , or **Delete** language packs.

The RM Server does not retain older versions of the Language Packs.

There are two methods of storing Language Pack files to the RM Server:

Automatic Import
Each time a radio is added to the RM Server, its language packs file is automatically added if not currently stored in the RM Server. The language packs files are then available to other managed radios. See Adding Radios to Radio Management on page 80.

Manual Import

Using the Import Language Packs. See Importing Language Packs Manually on page 103.

Table 19: Manage Language Packs

Column and Buttons	Description
Language	Allows the user to only view the name of each Language Package file.
Locale	Allows the user to only view the language and the language's region.
Version	Allows the user to only view the version number of each Language Package file.
Product Family	Allows the user to only view the family that each Language Package file belongs to.
Size (KB)	Allows the user to only view the file size of each Language Package file.
Imported Date	Allows the user to only view the actual Date and Time that all Language Packages files were imported.
In-Use template and Radios	Allows the user to only view the number of templates and radios using each Language Package file.
In-Use Templates (Template Mode)	Allows the user to only view the number of templates using each Language Package file in Template Mode.
In-Use Radios (Configuration Mode)	Allows the user to only view the number of radios using each Language Package file.
Comments	Allows the user to add comments on a per language pack basis.

1.1.2.15.1
Importing Language Packs Manually

Importing Language Packs allows the user to import new versions of Language Packs to the RM Server.

When and where to use: Use this procedure to import language packs.

Procedure:

1. From the **Actions** menu, select **Manage→Language Packs** to open the **Resource View Language Packs** window.
2. Click the **Add** button.
3. From the **Import Language Packs** window, select the relevant language pack file.
4. Click **Import**.

The language pack file is imported to the RM server.

1.1.2.16
Manage Voice Announcements

The **Manage Voice Announcements** feature allows the user to view automatically imported Voice Announcement files stored in the RM Server, and to manually import new Voice Announcement files to the RM Server.

Manage Voice Announcement is launched from the **Actions** menu by selecting **Manage→Voice Announcements**.

The user can **Add** , **Edit** , or **Delete** language packs.

NOTICE: Voice Announcement files cannot be automatically or manually imported when a file name match exists in the RM server. This importing is true even if the duration and content of the file are different.

NOTICE: The audio length of the `.mva` file must not exceed 20 seconds.

There are two methods of storing Voice Announcement files to the RM Server:

Automatic Import
Each time a radio is added to the RM Server, its Voice Announcement files are automatically added if not currently stored in the RM Server. The Voice Announcement files are then available to other managed radios. See Adding Radios to Radio Management on page 80.

Manual Import
Using the Import Voice files option. See Importing Voice Announcement Files Manually on page 104.

Table 20: Manage Voice Announcements

Column and Buttons	Description
Name	Allows the user to only view the name of each Voice Announcement file.
Size (KB)	Allows the user to only view the file size of each Voice Announcement file.
Imported Date	Allows the user to only view the actual Date and Time that all Voice Announcement files were imported.
In-Use template and Radios	Allows the user to only view the number of templates and radios using each Voice Announcement file.
In-Use Templates (Template Mode)	Allows the user to only view the number of templates using each Voice Announcement file in Template Mode.
In-Use Radios (Configuration Mode)	Allows the user to only view the number of radios using each Voice Announcement file.
Comments	Allows the user to add comments on a per Voice Announcement file basis.

1.1.2.16.1
Importing Voice Announcement Files Manually

Import Voice Announcement Files allows the user to import new versions of Voice Announcement files to the RM Server.

When and where to use: Use this procedure to import voice announcement files.

Procedure:

1. From the **Actions** menu, select **Manage→Voice Announcements** to open the **Resource View Voice Announcement** window.
2. Click the **Add** button.
3. From the **Import Voice Announcements** window, select the relevant **.mva** file.

   The audio length of the `.mva` file must not exceed 20 seconds.

4 Click **Open**.

The voice announcement file is imported to the RM server.

1.1.2.17

Manage Text To Speech Packs

The **Manage Text To Speech Packs** feature allows the user to view automatically imported Text To Speech packs stored in the RM Server, and to manually import new Text To Speech packs to the RM Server.

Manage Text To Speech Packs is launched from the **Actions** menu by selecting **Manage→ Text To Speech Packs**

The user can **Add** , **Edit** , or **Delete** Text To Speech packs.

The RM Server does not retain older versions of the Text To Speech files.

There are two methods of storing Text To Speech packs to the RM Server:

Automatic Import
Each time a radio is added to the RM Server, its Text To Speech packs are automatically added if not currently stored in the RM Server. The Text To Speech packs is then available to other managed radios. See Adding Radios to Radio Management on page 80.

Manual Import
Using the Text To Speech packs. See Importing Text To Speech Packs Manually on page 105.

Table 21: Manage Text To Speech Packs

Column and Buttons	Description
Name	Allows the user to only view the name of each Text To Speech pack.
Size (KB)	Allows the user to only view the file size of each Text To Speech pack.
Imported Date	Allows the user to only view the actual Date and Time that all Text To Speech packs were imported.
In-Use template and Radios	Allows the user to only view the number of templates and radios using each Text To Speech pack.
In-Use Templates (Template Mode)	Allows the user to only view the number of templates using each Text To Speech pack in Template Mode.
In-Use Radios (Configuration Mode)	Allows the user to only view the number of radios using each Text To Speech pack.
Comments	Allows the user to add comments on a per Text To Speech pack basis.

1.1.2.17.1

Importing Text To Speech Packs Manually

Import Text To Speech Packs allows the user to import new versions of Text To Speech packs to the RM Server.

When and where to use: Use this procedure to import Text To Speech packs.

Procedure:

1 From the **Actions** menu, select **Manage→Voice Announcements** to open the **Resource View Text To Speech packs** window.

2 Click the **Import** button.

3 From the **Import Text To Speech Packs Files** window, select the relevant **.ttspack** file.

4 Click **Open**.

The Text To Speech pack is imported to the RM server.

1.1.2.18

Manage OTAP Keys

The **Manage OTAP Keys** feature allows the user to view the Over The Air Programming (OTAP) keys stored in the RM Server.

OTAP allows radios to be programmed without the need to be connected to the programming station or DP (Device Programmer). Once radios are configured through a USB connection and can communicate on the RM system, over the air programming is possible.

Manage OTAP Keys is launched from the **Actions** menu by selecting **Manage→ Manage OTAP Keys**.

The user can **Add**, **Edit**, or **Delete** OTAP keys.

Table 22: Manage OTAP Keys

Column and Buttons	Description
Key ID	This is the ID together with the key value used to produce an OTAP authentication key for the radio.
Key Alias	This is the name to identify an OTAP key.
Key Value	This is the value together with the key ID used to produce an OTAP authentication key for the radio.
In-Use Templates and Sets	Allows the user to only view the number of templates and sets using the key.
In-Use Templates (Template Mode)	Allows the user to only view the number of templates using each key in Template Mode.
In-Use Sets (Configuration Mode)	Allows the user to only view the number of sets using each key in Configuration Mode.
Comments	Allows the user to add comments on a per OTAP key basis.

The following operations can be performed on OTAP keys:

1.1.2.18.1

Adding OTAP Keys

Add OTAP Keys allows the user to add OTAP keys to the RM Server.

Procedure:

1 From the **Actions** menu, select **Manage→OTAP Keys** to open the **Resource View OTAP Keys** window.

2 Click the **Add** button.

3 From the **Add OTAP Key** window, type in values for the **Key ID**, **Key Alias**, and **Key Value**.

4 Click **OK**.

The OTAP key is imported to the RM server and is displayed in the **Resource View OTAP Keys** window.

1.1.2.18.2
Editing OTAP Keys

Edit OTAP Keys allows the user to edit **Key ID**, **Key Alias**, and **Key Value** when these fields are not being used by any managed radios or sets.

Procedure:

1 From the **Actions** menu, select **Manage→OTAP Keys** to open the **Resource View OTAP Keys** window.

2 Select the desired row in the **Resource View OTAP Keys** window.

3 Type in the desired values in the text field to set the new OTAP key fields.

4 Click the view area to set the new value.

1.1.2.18.3
Deleting OTAP Keys

Delete Key(s) window allows the user to delete the rows that are not being used by any managed radios or sets.

Procedure:

1 From the **Actions** menu, select **Manage→Privacy Keys** to open the **Resource View OTAP Keys** window.

2 Click the **Delete** button.

The **Delete Key(s)** window appears.

3 Click **OK**.

OTAP key is deleted from the RM Server.

1.1.2.19
Manage Privacy Keys

The **Manage Privacy Keys** feature allows the user to view the privacy keys stored in the RM Server.

Manage Privacy Keys is launched from the **Actions** menu by selecting **Manage→ Manage Privacy Keys**.

The user can **Add** , **Edit** , or **Delete** privacy keys.

Table 23: Manage Privacy Keys

Column and Buttons	Description
Key ID	This is an index key that is mapped to the encryption key used for scrambling.
Key Alias	This is the name to identify a privacy key.

Column and Buttons	Description
Key Value	This is an encryption value used to scramble and unscramble voice calls and data transmissions on privacy-enabled channels.
In-Use Templates and Sets	Allows the user to only view the number of templates and sets using the key.
In-Use Templates (Template Mode)	Allows the user to only view the number of templates using each key in Template Mode.
In-Use Sets (Configuration Mode)	Allows the user to only view the number of sets using each key in Configuration Mode.
Comments	Allows the user to add comments on a per privacy key basis.

The following operations can be performed on Privacy Keys:

1.1.2.19.1
Adding Privacy Keys

Add Privacy Keys allows the user to add Privacy keys to the RM Server.

Procedure:

1. From the **Actions** menu, select **Manage→Privacy Keys** to open the **Resource View Privacy Keys** window.
2. Click the **Add** button.
3. From the **Add Privacy Key** window, type in values for the **Key ID**,**Key Alias**, and **Key Value**.
4. Click **OK**.

The Privacy key is imported to the RM server and is displayed in the **Resource View Privacy Keys** window.

1.1.2.19.2
Editing Privacy Keys

Edit Privacy Keys allows the user to edit **Key Alias** and **Key Value** when these fields are not being used by any managed radios or sets.

Procedure:

1. From the **Actions** menu, select **Manage→Privacy Keys** to open the **Resource View Privacy Keys** window.
2. Select the desired row in the **Resource View Privacy Keys** window.
3. Type in the desired values in the text field to set the new Privacy key fields.
4. Click the view area to set the new value.

1.1.2.19.3
Deleting Privacy Keys

Delete Key(s) window allows the user to delete the rows that are not being used by any managed radios or sets.

Procedure:

1 From the **Actions** menu, select **Manage→Privacy Keys** to open the **Resource View Privacy Keys** window.

2 Click the **Delete** button.

The **Delete Key(s)** window appears.

3 Click **OK**.

Privacy key is deleted from the RM Server.

1.1.2.20

Manage RAS Keys

The **Manage RAS Keys** feature allows the user to view the Restricted Access to System (RAS) keys stored in the RM Server.

Manage RAS Keys is launched from the **Actions** menu by selecting **Manage→ Manage RAS Keys**.

The user can **Add** , **Edit** , or **Delete** RAS keys.

All radios and repeaters have default RAS Key. All digital channels (both initial and added channels) are defaulted to the default keys. The default key is 000000. To disable RAS, go to Authentication (RAS) on page 528 and select **Disable**. For radios, go to RAS Alias on page 772, select the channel in the Radio, and browse to **None**.

Table 24: Manage RAS Keys

Column and Buttons	Description
Key Alias	This is the name to identify a RAS key.
Key Value	This is the value used to produce a RAS authentication key for the radio.
In-Use Templates and Sets	Allows the user to only view the number of templates and sets using the key.
In-Use Templates (Template Mode)	Allows the user to only view the number of templates using each key in Template Mode.
In-Use Sets (Configuration Mode)	Allows the user to only view the number of sets using each key in Configuration Mode.
Comments	Allows the user to add comments on a per RAS key basis.

The following operations can be performed on RAS Keys:

1.1.2.20.1

Adding RAS Keys

Add RAS Keys allows the user to add RAS keys to the RM Server.

Procedure:

1 From the **Actions** menu, select **Manage→RAS Keys** to open the **Resource View RAS Keys** window.

2 Click the **Add** button.

3 From the **Add RAS Key** window, type in values for the **Key Alias**and **Key Value**.

4 Click **OK**.

The RAS key is imported to the RM server and is displayed in the **Resource View RAS Keys** window.

1.1.2.20.2

Editing RAS Keys

Edit RAS Keys allows the user to edit **Key ID**, **Key Alias**, and **Key Value** when these fields are not being used by any managed radios or sets.

Procedure:

1 From the **Actions** menu, select **Manage→Symmetric Keys** to open the **Resource View RAS Keys** window.

2 Select the desired row in the **Resource View RAS Keys** window.

3 Type in the desired values in the text field to set the new RAS key fields.

4 Click the view area to set the new value.

1.1.2.20.3

Deleting RAS Keys

Delete Key(s) window allows the user to delete the rows that are not being used by any managed radios or sets.

Procedure:

1 From the **Actions** menu, select **Manage→RAS Keys** to open the **Resource View RAS Keys** window.

2 Click the **Delete** button.

The **Delete Key(s)** window appears.

3 Click **OK**.

RAS key is deleted from the RM Server.

1.1.2.21

Manage Symmetric Keys

The **Manage Symmetric Keys** feature allows the user to view the symmetric keys stored in the RM Server.

Manage Symmetric Keys is launched from the **Actions** menu by selecting **Manage→ Manage Symmetric Keys**.

The user can **Add** , **Edit** , or **Delete** symmetric keys.

Table 25: Manage Symmetric Keys

Column and Buttons	Description
Key ID	This is an index key that is mapped to the encryption key used for scrambling.
Key Alias	This is the name to identify a symmetric key.

Column and Buttons	Description
Key Value	This is an encryption value used to scramble and unscramble voice calls and data transmissions on privacy-enabled channels.
In-Use Templates and Sets	Allows the user to only view the number of templates and sets using the key.
In-Use Templates (Template Mode)	Allows the user to only view the number of templates using each key in Template Mode.
In-Use Sets (Configuration Mode)	Allows the user to only view the number of sets using each key in Configuration Mode.
Comments	Allows the user to add comments on a per symmetric key basis.

The following operation can be performed on Symmetric Keys:

1.1.2.21.1
Adding Symmetric Keys

Add Symmetric Keys allows the user to add symmetric keys to the RM Server.

Procedure:

1. From the **Actions** menu, select **Manage→Symmetric Keys** to open the **Resource View Symmetric Keys** window.
2. Click the **Add** button.
3. From the **Add Symmetric Key** window, type in values for the **Key ID**, **Key Alias**, and **Key Value**.
4. Click **OK**.

The symmetric key is imported to the RM server and is displayed in the **Resource View Symmetric Keys** window.

1.1.2.21.2
Editing Symmetric Keys

Edit Symmetric Keys allows the user to edit **Key ID** and **Key Value** when these fields are not being used by any managed radios or sets. **Key Alias** is always editable. **In-Use (Templates)** is not editable.

Procedure:

1. From the **Actions** menu, select **Manage→Symmetric Keys** to open the **Resource View Symmetric Keys** window.
2. Select the desired row in the **Resource View Symmetric Keys** window.
3. Type in the desired values in the text field to set the new symmetric key fields.
4. Click the view area to set the new value.

1.1.2.21.3
Deleting Symmetric Keys

Delete Key(s) window allows the user to delete the rows that are not being used by any managed radios or sets.

Procedure:

1. From the **Actions** menu, select **Manage→Symmetric Keys** to open the **Resource View Symmetric Keys** window.
2. Click the **Delete** button.

   The **Delete Key(s)** window appears.
3. Click **OK**.

   Symmetric key is deleted from the RM Server.

1.1.2.22
Manage Pre-Shared Keys

The **Manage Pre-Shared Keys** feature allows the user to view the pre-shared keys stored in the Radio Management (RM) Server.

Manage Pre-Shared Keys is launched from the **Actions** menu by selecting **Manage→Pre-Shared Keys**.

The user can **Add**, **Edit**, or **Delete** pre-shared keys.

Table 26: Manage Pre-Shared Keys

Column and Buttons	Description
Key Alias	This is the name to identify a pre-shared key.
Key Value	This is an encryption value used to scramble and unscramble codeplug data transmissions on a secure-enabled mode. The key value must be in hexadecimal number (0–9 and A–F).
In-Use Sets (Configuration Mode)	Allows the user to only view the number of sets using each pre-shared key in Configuration Mode.
Comments	Allows the user to add comments on a per pre-shared key basis.

The following operation can be performed on pre-shared keys:

1.1.2.22.1
Adding Pre-Shared Keys

Add Pre-Shared Keys allows the user to add pre-shared keys to the Radio Management (RM) Server.

Procedure:

1. From the **Actions** menu, select **Manage→Pre-Shared Keys** to open the **Resource View Pre-Shared Keys** window.
2. Click the **Add** button.
3. From the **Add Pre-Shared Key** window, type in values for the **Key Alias** and **Key Value**.

   Key Alias is automatically filled with the PSK***<N>*** value, where ***<N>*** is an incremented value. For example, the first default key alias is **PSK1** and is followed by **PSK2**. The key alias can contain only the first 128 ASCII characters..

Key Value is empty by default. The pre-shared key values must be 32 characters in `.hex` format.

4 Click **OK**.

The pre-shared key is imported to the RM server and is displayed in the **Resource View Pre-Shared Keys** window.

1.1.2.22.2
Editing Pre-Shared Keys

Edit Pre-Shared Keys allows the user to edit **Key Alias** and **Key Value** when these fields are not being used by any managed radios or sets.

Procedure:

1 From the Actions bars, select **Tools**→ **Manage Pre-Shared Keys...** to open the **Manage Pre-Shared Keys** window.

2 Select the desired row in the **Manage Pre-Shared Keys** window.

3 Type in the desired values in the text field to set the new pre-shared key fields.

4 Click the view area to set the new value.

1.1.2.22.3
Deleting Pre-Shared Keys

Delete Key(s) window allows the user to delete the rows that are not being used by any managed radios or sets.

Procedure:

1 From the **Actions** menu, select **Manage**→**Pre-Shared Keys** to open the **Resource View Pre-Shared Keys** window.

2 Click the **Delete** button.

The **Delete Key(s)** window appears.

3 Click **OK**.

The pre-shared key is deleted from the Radio Management (RM) Server.

1.1.2.23
Manage IP Program Systems

The **Manage IP Program Systems** feature allows the user to view the IP Program systems stored in the RM Server.

Manage IP Program Systems is launched from the **Actions** menu by selecting **Manage**→ **Manage IP Program Systems**.

The user can **Add** , **Edit** , or **Delete** IP Program systems.

Table 27: Manage IP Program Systems

Column and Buttons	Description
System Alias	Allows the user to only view the radio-user recognizable name of the system.
System Type	Allows the user to only view the system type.
IP Address	Allows the user to only view the IP address of the IP Program system.
Port	Allows the user to only view the port number of the IP Program system.
Network ID	Allows the user to only view the number of templates using each key in Template Mode.
Authentication Key	Allows the user to only view the authentication key of the IP program systems.
In-Use (Radios)	Allows the user to only view the number of radios using each IP program systems in Configuration Mode.
Comments	Allows the user to add comments on a per symmetric key basis.

The following operation can be performed for IP Program Systems:

1.1.2.23.1
Adding IP Programming System

Add IP Program System allows the user to create IP Program System to the RM Server.

When and where to use: Use this procedure to add an IP Programming system.

Procedure:

1 From the **Actions** menu, select **Manage→IP Programming System** to open the **IP Program Systems** window.

2 Click the **Add** button.

3 From the **Add IP Program System** window, type in values for the **System Type**, **System Alias**, **IP Address**, **Port**, and **Network ID**.

If…	Then…
performing any IP programming	perform the following actions: **a** Select **Capacity Max** from the **System Type** drop down list as the system type. **b** Fill in all the other **fields**. Ensure that these fields match the **Controller IP** or **Port** and **Network ID** from the Capacity System set. **c** Click **OK**. **d** Return to **Radio View**. **e** Select the Repeater or CMSS and right-click the row. **f** Click **Select IP Program System**.

If…	Then…
	g Select the IP Program System and click **OK**.
performing MNIS Voice IP Programming	perform the following actions: **a** Select **Other** from the **System Type**drop down list as the system type. **b** Fill in all the **IP** of the MNIS computer and all other **fields**. Ensure that these fields match the **Controller IP** or **Port** and **Network ID** from the MNIS set. **c** Click **OK**. **d** return to **Radio View**. **e** Select the MNIS and right-click the row. **f** Click **Select IP Program System**. **g** Select the IP Program System and click **OK**.
performing Repeaters IP Programming	perform the following actions: **a** Read the repeater through **IP Programming**. **b** Program the capacity Max IP programming.

The IP Program system is imported to the RM server and is displayed in the **IP Program Systems** window.

1.1.2.24

Manage Capacity Max System Server Data

The **Capacity Max System Server Data** selection allows the user to view the Capacity Max systems stored in the RM Server.

The **Capacity Max System Server Data** window is launched from the **Actions** menu by selecting **Manage→ Capacity Max System Server Data**.

The **View by** selections allows the user to quickly filter and view the Capacity Max systems based on **Subscriber Access Control (SAC)** or **Talkgroup Site Association (TGSA)**.

The following table structures can be viewed:

1.1.2.24.1

Subscriber Access Control Table

The **Subscriber Access Control** (SAC) table displays all fields related to subscriber access in the system. The features allowed by that subscriber are centrally controlled. This information is programmed into the Trunking Controller.

The user can **Add** , **Export** , and **Import** devices to the SAC table. The user can also use the **Clone** feature by right-clicking on the SAC table. Cloning allows the user to copy the configuration of a device to another device of the same model.

NOTICE: One or more devices must be selected to enable the **Export** (Grid to File) feature.

The following device types can be added:

- Non-Motorola Solutions Radio
- Console

- Data Gateway
- Motorola Solutions Radio

IMPORTANT:
Export SAC Requirements:

- All columns will be exported.
- Export is only allowed if all exported rows are error-free.
- For reference fields (sites and site list), only the Name of the referenced item will be exported.
- Only selected rows will be exported.

Import SAC Requirements:

- All columns can be imported.
- Device type and device ID columns are required. Import fails if either is missing.
- If an optional column is missing, or has an invalid value:
  - For new entries, the default value will be used.
  - When overwriting entries, old value will be preserved.
- Rows are identified by device ID.
  - If a row already exists in the table with a given device ID, it will be overwritten with the imported data.

    NOTICE: Exception for rows associated with a radio: Physical Serial Number, Serial Number, and Device Type cannot be overwritten.
  - If multiple rows exist in the table with the same device ID, those entries cannot be overwritten.

    NOTICE: If import data contains that device ID, that record will not be imported
- If the same device ID appears multiple times in the import data, continue with import. Entries that appear later in the file will overwrite earlier entries.
- For columns that reference sites or site lists, assign the site or site list that has the same name. If no item exists with a matching name in the import data, assign the default.
- If duplicate, recognized columns exist, import fails.
- If unrecognized columns exist, they are ignored.

The SAC table contains the following fields:

1.1.2.24.1.1
Device Type

This feature displays the type of device for which the access control is configured.

Motorola Solutions Radios, that are assigned a Capacity Max System, are automatically added to the Subscriber Access Control (SAC) list for that Capacity Max System. All other device types must be manually added.

1.1.2.24.1.2
Serial Number

This field displays the serial number of the device.

Serial number is a string of unique alphanumeric characters to identify the device. Each device has a unique serial number. For non-Motorola Solutions radios, Data Gateways, and Voice Consoles, this value is always zero.

1.1.2.24.1.3
Physical Serial Number

The physical serial number is a unique identifier of the device.

This value is derived from the hardware IDs of the radio and is used for authentication.

1.1.2.24.1.4
Device ID

This field displays an individual ID that uniquely identifies the device.

The Device ID is the radio ID of the Subscriber Access Control entry. A Motorola Solutions Radio, Non-Motorola Solutions Radio, Console (Voice Application), and Data Gateway all have radio IDs.

1.1.2.24.1.5
Enabled on System

This field allows the user to enable or disable the device from gaining access to the system.

1.1.2.24.1.6
Queue Priority

This feature specifies the priority of the device.

The Queue Priority is the priority of a radio (or console) in the call queue. The priority range for a radio is 1 (highest) to 10 (lowest).

1.1.2.24.1.7
Allowed Sites

This field specifies the total number of allowed sites in the device (up to 120 sites).

1.1.2.24.1.8
Telephone Gateway Site

This feature specifies the VRC Gateway site where the Telephone gateway is deployed.

1.1.2.24.1.9
Voice Recording Site

This feature specifies the VRC Gateway site where the Voice Recorder is deployed.

1.1.2.24.1.10
Group Data Call

This feature specifies whether or not the device is allowed to initiate Group Data Calls.

1.1.2.24.1.11
Individual Data Call

This feature specifies whether or not the device is allowed to initiate Individual Data Calls.

1.1.2.24.1.12
Group Voice Call

This feature specifies whether or not the device is allowed to initiate Group Voice Calls.

1.1.2.24.1.13
Broadcast Voice Call

This feature specifies whether or not the device is allowed to initiate Broadcast Voice Calls.

1.1.2.24.1.14
Individual Voice Call

This feature specifies whether or not the device is allowed to initiate the Individual Voice Call.

1.1.2.24.1.15
Receive Individual Voice Call

This feature specifies whether or not the device is allowed to receive Individual Voice Calls.

1.1.2.24.1.16
Multi-Site All Call

This feature specifies whether or not the device is allowed to initiate Multi-Site All Calls.

1.1.2.24.1.17
Site All Call

This feature specifies whether or not the device is allowed to initiate the Site All Call.

Site All Call allows the target radios to receive the call, not respond to it. The Site All Call has priority over Talkgroup and Individual calls. This feature should have the same priority as the other “All Call” types. Any radios that are not in Emergency Calls or All Calls should join Site All Calls.

1.1.2.24.1.18
Telephone Call

This feature specifies whether or not the device is allowed to initiate Telephone Calls.

1.1.2.24.1.19
Receive Telephone Call

This feature specifies whether or not the device is allowed to receive Telephone Calls.

1.1.2.24.1.20
Emergency Call

This feature specifies whether or not the device is allowed to initiate Emergency Calls.

1.1.2.24.1.21
Remote Monitor

This feature specifies whether or not the device is allowed to initiate Remote Monitor requests.

Remote Monitor is known as Ambient Listening within the DMR Tier III standard. Remote Monitor allows the user to place a call without the called radio knowing that the call is in progress. Therefore, when this feature is enabled, the transmission is monitored without any indication being given to the user.

1.1.2.24.1.22
Receive Remote Monitor

This feature specifies whether or not the device is allowed to receive Remote Monitor requests.

1.1.2.24.1.23
Short Data Call

This feature specifies whether or not the device is allowed to initiate Short Data Calls.

1.1.2.24.1.24
Call Alert

This feature specifies whether or not the device is allowed to initiate Call Alert requests.

Call Alert is a feature that allows a radio user or console operator to page a radio (portable or mobile, with or without keypad or display) without use of a traffic channel resource. This feature is used when a call initiator is either one of the following scenarios:

- knows that it is likely that the destination radio user is away from the radio and wants to signal the user (via horn and lights or simple audio/visual alert at the radio (or by using “escalert”). The destination radio user can easily call back the initiator when he/she returns to the radio, which could be a short or extended period of time later.
- wants to signal a busy (at the radio, but doing other things) or away user (receiver) that he/she should call the initiator when available, perhaps because the initiator cannot place an individual call himself; the destination radio user can easily immediately call back the initiator.

When enabled, the radio is allowed to perform a Call Alert. The radio user can program the radio to use PTT either to immediately start an individual call to the initiator or to act with normal behavior.

1.1.2.24.1.25
Initiate Stun/Revive

This feature specifies whether or not the device is allowed to initiate Stun/Revive call requests.

1.1.2.24.1.26
Receive Stun/Revive

This feature specifies whether or not the device is allowed to receive Stun/Revive call requests.

1.1.2.24.1.27
Voice Interrupt Tx

This field allows a radio to have the ability to interrupt a transmitting radio.

1.1.2.24.1.28
Radio Check Tx

Allows a user/console operator to determine if a transmitting radio is active in a system without showing any indication to the radio's user.

1.1.2.24.1.29
Status Call

This feature specifies whether or not the device is allowed to initiate Status Calls.

1.1.2.24.1.30
System All Call Tx

This feature specifies whether or not the transmitting device is allowed to initiate System All Calls.

1.1.2.24.1.31
Kill Rx

Allows a user to enable or disable the transmission of a receiving radio.

1.1.2.24.1.32
Domain ID

Allows the user to determine the domain ID for the radio. Range is from 0–16.

For Motorola Solutions radios, the value is from 0–16. For non-Motorola Solutions radios, the range is 0.

1.1.2.24.1.33
Receive DGNA

This field configures the subscribers to accept or ignore Dynamic Group Number Assignment (DGNA) sent from the console.

When this feature is enabled, the subscribers are able to accept DGNA commands. This feature is only available for repeaters.

1.1.2.24.2
Talkgroup Site Association Table

The **Talkgroup Site Association** (TGSA) table displays all fields related to talkgroup site association in the system.

The user can **Add** , **Delete** , **Export** , and **Import** talkgroups to the TGSA table. The user can also use the **Clone** feature by right-clicking on the SAC table. Cloning allows the user to copy the configuration of a device to another device of the same model.

NOTICE: One or more talkgroups must be selected to enable the **Delete** and **Export** (Grid to File) features.

IMPORTANT:
Export TGSA Requirements:

- All columns will be exported.
- Export is only allowed if all exported rows are error-free.
- For reference fields (allowed site list), export the Name of the referenced item.
- Only selected rows will be exported.

Import TGSA Requirements:

- All columns can be imported.
- Only Talkgroup ID column is required. If missing, import fails.
- If an optional column is missing, or has an invalid value:
  - For new entries, the default value will be used.
  - When overwriting entries, old value will be preserved.
- Rows are identified by talkgroup ID.
  - If a row already exists in the table with a given talkgroup ID, it will be overwritten with the imported data.
  - If multiple rows exist in the table with the same talkgroup ID, those entries cannot be overwritten.

    NOTICE: If import data contains that talkgroup ID, that record will not be imported.
- If the same talkgroup ID appears multiple times in the import data, continue with import. Entries that appear later in the file will overwrite earlier entries.
- For columns that reference items, assign the item that has the same name. If no item exists with a matching name in the import data, assign the default.
- If duplicate, recognized columns exist, import fails.
- If unrecognized columns exist, they are ignored.

The TGSA table contains the following fields:

1.1.2.24.2.1
Talkgroup ID

Allows the user to input the talkgroup ID.

Range:

Maximum	Minimum	Increment
16777215	1	1

1.1.2.24.2.2
Queue Priority

Specify the priority of the device. The priority of the device decides the priority of a call in the queue. The range is from 1 (Highest) - 10 (Lowest).

1.1.2.24.2.3
Allowed Sites

This field shows all talkgroups and its allowed sites.

1.1.2.24.2.4
Priority Monitor

This field allows the talkgroup to be prioritized. The priority talkgroups reside in the Digital RX Group List.

When this checkbox is enabled, it allows a radio that is listening to a voice talkgroup call to leave the current call and join a higher priority talkgroup call on another channel.

1.1.2.25
Convert Radios from Template Mode

The conversion of radios to configuration mode is a feature for users who are already managing radios in template mode.

See Converting Radios from Template Mode on page 123.

The RM Server database can store radio data in either template mode or configuration mode. In order to view and edit data for a device using the RM Configuration Client, it must be converted to a configuration. This is supported by the Convert Template to Configuration feature in Radio Management. See Convert Template to Configuration on page 123.

NOTICE: Radios can only be converted if their data exists as templates in the RM Server database. Once radio data is converted to a configuration, it can no longer exist as a template in the RM server database. Also, radios with ongoing scheduled jobs cannot be converted. All changes made to the radio since the last write job is discarded after the conversion.

The conversion of a large fleet of radios from template mode requires planning ahead. Decide when the conversion will take place, decide on logical steps, and whether all radios should be converted at once or gradually. Consider converting batches of radios that share the same configuration. This ensures that radios are set up correctly.

IMPORTANT: Since radio data is stored differently in the RM Server database between template mode and configuration mode, expect the conversion process to take a significant amount of time. Allow for up to 1 hour to migrate 500 radios. During the conversion, the RM system is unavailable and the user cannot program or change anything.

1.1.2.25.1

Converting Radios from Template Mode

This feature allows the user to convert radios from Template mode to Configuration mode in Radio View.

NOTICE:
The RM Server stores radio data as Templates or Configurations in the database. In order to view and edit the data for a device in the RM Configuration Client, it must be converted to a Configuration. Once radio data is converted from a Template to a Configuration, it can no longer exists as a Template in the RM Server database.

Radio Groups are shared between Template and Configuration modes. If a radio is assigned to a Group in Template mode, it is placed into the same Group in Configuration mode after the conversion.

Procedure:

1 From the **Actions** menu, select **Advanced→Convert Radio from Template Mode**.

The **Convert Radio from Template Mode** window opens and displays a list of all radios stored in the RM Server as templates.

2 Select one or more radios from the list by checking the box for the relevant radio.

WARNING:

1 Once a radio is converted to a Configuration, it is no longer available as a Template.

2 Radios with ongoing scheduled jobs cannot be converted.

3 All changes made to the radio since the last write will be discarded after the conversion.

3 Click **OK**.

4 To view the progress of the operation, click the **Task** tab at the bottom.

Once the task is completed, the radio appears in the **Radio View** list as a Configuration and no longer appears in the RM Server database as a Template.

1.1.2.26

Convert Template to Configuration

The **Convert Template to Configuration** feature is only accessible in Configuration View and allows the user to convert Templates from RM Server database to Configurations.

See Converting a Template to a Configuration on page 124.

The **Convert Template to Configuration** window is launched from the **Actions** menu by selecting **Advanced→ Convert Template to Configuration**.

The user can **Add** and **Edit** Configurations and the Sets assigned to each Configuration. The **Delete** icon allows the user to remove configurations from the RM Server database that are not assigned to a device.

1.1.2.26.1
Converting a Template to a Configuration

This feature allows the user to convert radios from Template mode to Configuration mode in Configuration View.

NOTICE:
The RM Server stores radio data as Templates or Configurations in the database. In order to view and edit the data for a device in the RM Configuration Client, it must be converted to a Configuration. Once radio data is converted from a Template to a Configuration, it can no longer exists as a Template in the RM Server database.

Radio Groups are shared between Template and Configuration modes. If a radio is assigned to a Group in Template mode, it is placed into the same Group in Configuration mode after the conversion.

Procedure:

1 From the **Actions** menu, select **Advanced→Convert Template to Configuration**.

The **Convert Template to Configuration** window opens and displays a list of all Templates stored in the RM Server.

2 Select one or more Templates from the list by checking the box for the relevant Template.

WARNING:

1 Once a radio is converted to a Configuration, it is no longer available as a Template.

2 Radios with ongoing scheduled jobs cannot be converted.

3 All changes made to the radio since the last write will be discarded after the conversion.

3 Click **OK**.

4 To view the progress of the operation, click the **Task** tab at the bottom.

Once the task is completed, the Configuration appears in the **Configuration View** list.

1.1.2.27
Settings Window

Select **Actions** →**Settings** to launch the **Settings** window.

Table 28: Settings Tab

Tab	Description
Licenses	See Licenses Settings on page 125.
Language	

1.1.2.27.1
Connection Settings

The **Connection Settings** window allows the user to view or modify communications between the Radio Management Configuration Client (RMC) and the RM Server's database.

Whenever this RMC is launched, it automatically attempts to connect to the RM Server's database using these settings. **Connection Settings** is launched from the **Actions** menu by selecting **Settings→Connection**.

Table 29: Connection Settings

Column	Description
Address	Allows the user to view or modify the IP (Internet Protocol) Address part of the Address-Port combination that is used by the Radio Management Client to communicate with the RM Server's database. This address can be specified by either the IP (Internet Protocol) Address or the DNS (Domain Name System) name. If the RM Server is deployed on the same machine as the RMC, the **Address** field is set to **localhost**.
Port	Defines the Port part of the IP (Internet Protocol) Address-Port combination that is used by the RMC to communicate with the RM Server's database. The default **Port** value of **443** is used for most deployments. **NOTICE:** Previous releases of Radio Management used port 8675. Port 8675 is no longer supported as the default port for establishing a connection to the RM Server.

NOTICE: If the **Address** and **Port** fields are set correctly and the RM Client cannot connect to the RM Server, see the Radio Management Connection Problems on page 179 troubleshooting section.

1.1.2.27.2
Licenses Settings

The **Licenses Settings** window allows the user to recover Application and Radio Licenses to the RM Server.

Licenses Settings is launched from the **Actions** menu by selecting **Settings→Licenses**.

Table 30: Licenses Settings

Column	Description
Recover Application Licenses	Only with the "From EID" (Entitlement ID) Method. When the user needs to re-image or reformat the RM Server's hard drive, the **Recover Application Licenses** allows the user to recover all radio Application Licenses to the RM Server : **1** Verify that the user have an Internet connection. **2** "Enter the Entitlement ID" in the entry field. **3** Select the **Recover Application Licenses** button. **4** Verify in the **Actions→Manage→Licenses→Application License View→Available** column to transfer to server field that the proper amount of licenses have been retrieved from Motorola Solutions.
Recover Radio Licenses	When the user needs to re-image or reformat the RM Server's hard drive, the **Recover Radio Licenses** allows the user to recover all Radio Licenses to the RM Server :

Column	Description
	1 Once the radio is brought back into Radio Management , this **Recover Radio Licenses** can be run. 2 Once this Recover process is complete, the user must also run the **Recover Licenses** to change the Radio Licenses from a Status of `Registered` to `Ready for Activation`. **NOTICE:** To run the **Recover Radio Licenses**, go to **Actions→Manage→Licenses→Radio License View**, right click at the desired radio, and select **Restore Licenses**.
Recover Capacity Max System Server Licenses	When the user needs to re-image or reformat the RM Server's hard-drive, the **Recover Capacity Max Licenses**feature allows the user to recover all Capacity Max System Server Licenses to the RM Server.

1.1.2.27.3

User Settings

The **User Settings** window allows a non-domain user to change their password stored in the RM Server.

NOTICE: The **User** selection is only active when logging in to the RM Server as a non-domain user within a non-domain deployment.

User Settings is launched from the **Actions** menu by selecting **Settings→User**.

NOTICE:

- Password value must be at least 15 characters and inclusive of one lowercase and one uppercase alphabetic characters as well as one non-alphanumeric character.
- Password ID allows up to 10 characters that contains the following characters: '0-9', 'A-Z', 'a-z', '-', and '_'.

Table 31: User Settings

Column	Description
Address	Allows the user to only view the IP (Internet Protocol) Address portion of the Address-Port.
Port	Allows the user to only view the Port portion of the IP Address-Port.
Username	Allows the user to only view the name of the user.
Current Password	Allows the user to type-in the current password.
New Password	Allows the user to type-in the new password.
Confirm New Password	Allows the user to retype the new password.
Change Password button	Click this button to apply the new password.
Cancel button	Click this button to cancel the setting.

1.1.2.27.4

Language

The **Language Settings** window allows the user to select the language used by the application.

The supported languages are **English**, **German**, **Spanish (Latin)**, **Spanish (Spain) French (France)**, **Italian (Italy)**, **Polish (Poland) Portuguese (Brazil)**, **Russian (Russia)**, **Turkish (Turkey)**, and **Chinese (Simplified)**

NOTICE:
When a new language is selected, the RM Client must be restarted before the new language takes effect.

The input language depends on the keyboard selection configured for the operating system of the computer, and not this language selection; however, numbers entered into text field are always shown in the form 0-9, regardless of the language selection.

1.1.2.27.5

Dealer Info

The **Dealer Info Settings** window allows the user to enter dealer specific information that will be included in MOTOTRBO customer handout reports.

The **Dealer Information** window provides three sections containing a template of text that can be modified by the user. The default template contains:

contact name
dealer name
dealer address
dealer city, state, zip
dealer mission statement
phone (xxx)xxx-xxxx
fax (xxx)xxx-xxxx
email user@domain
website www.dealername.com

1.1.2.27.6

Database Size Info

The **Database Size Info Settings** window displays read-only information regarding the amount of memory used for the RM Server database.

The following information is displayed:

Database size (KB)
Displays the current size of memory used in the RM Server.

Space used by sets (KB)
Displays the current size of memory used in the RM Server for Sets, either assigned or not assigned to Configurations.

The **Delete Unreferenced Sets** button deletes any configured Set that is not assigned to a Configuration. When selected, a confirmation window opens requiring user acknowledgment.

CAUTION: Review all configured Sets not assigned to any Configuration from Manage Sets on page 91 before using this feature. Once selected, all Sets not assigned to a Configuration will be permanently deleted from the RM Server.

1.1.2.27.7
Hide Messages

The **Hide Messages Settings** window allows the user to enable warning messages that were previously set to "Don't show again".

Messages are enabled by removing the check and selecting the **Hide** button.

1.1.2.28
View Tasks

The **Tasks** informational window allows the user to view operational jobs.

The Task window contains a summary of all operational jobs. For example, if the user selects a hundred radios and select **Delete**, the user is performing an operational job.

The **Tasks** informational window is launched from the **Actions** menu by selecting **View Tasks**.

Table 32: View Tasks Table

Column	Description
Job Name	
Created Time	
Summary	
Actions	A job can be canceled before it is completed by clicking the X.

1.1.3
Scheduler in Radio Management

The **Scheduler** menu opens the **Schedule Job** window. The **Schedule Job** window allows the user to schedule one or more radios for a Read, Write, or Factory Reset. Jobs can be scheduled to occur immediately or within a specific window of time. See Scheduling Jobs in Radio Management on page 130.

NOTICE: The **Scheduler** menu is enabled in **Radio View** when one or more radios are selected from the programming pane, have valid radio data and Configuration, and are not waiting for a Job process.

The **Job Schedule** window contains fields that allow the user to configure the following settings:

Table 33: Job Schedule Settings

Setting	Function
Job Type	The following job types are supported: **Write** The configuration data for all selected radios are written to the radios. If the **No Switchover** check box is checked, the radio is not automatically switched over after completion of the Write operation. The **No Switchover** option allows the user to deploy a configuration to a number of radios and postpone the activation of the configurations until a **Switchover** job is sent. **Switchover** A Switchover operation allows previously deployed configurations to become activated on the selected radios.

Setting	Function
	Read The selected radios are read and the configuration information is updated in the Server. The **Generate Configuration** check box is available for a Read job and generates a configuration from the data on the radio. If the **Apply to radio** option is checked, the configuration is assigned to the radio in Radio Management. **Generate configuration** A configuration is created from the data that is read from the radio. **Apply to radio** When Generate configuration is selected, the user has the option to apply the configuration to the radio. If not selected, the configuration is added to the RM server and can later by applied to one or more radios.
Connection Method	The following connection methods are supported: **USB + Wireless (LAN)** Connections are made via a USB port or a Wireless LAN in the RM Device Programmer. This connection method is required for the initial programming of devices. Programming includes configuration, firmware, feature activation, and device resources (language packs, voice packs, and more). **IP Program** Connections are made via a direct IP network connection in the RM Device Programmer. **Over the Air** Connections are made via radio channels through a control station connected to the RM Device Programmer. **Any** The RM Device Programmer allows connections to radios using any of the supported connection method types via a control station. Whichever connection that is made first is used to execute the job.
Suppress ARS after Switchover	Checking this check box prevents the ARS system from automatically sending reregistration messages after a Write with Switchover or Switchover operation has completed to avoid saturating the radio network with ARS registrations.
Switchover Timer (min)	Duration the radio user is allowed to delay the switchover when prompted on the radio display screen.
Job Name	Selects a name for the current job. It is recommended that a meaningful name is entered, such as “Wired write for Fire station #3” so that the job can be more easily identified in **Job View**.
Time Zone	Selects the time zone in which the current job event executes in a RM Device Programmer. This selection applies for the current radio or radios selected for this job in the **Schedule Job** window.
Start after	Selects the date (in day-month-year format) and time (in a 24-hour format) for the start of the job interval. This field is optional, and if not specified, the job executes as soon as possible.
End before	Selects the date (in day-month-year format) and time (in a 24-hour format) for the end of the active job interval. If a scheduled job has not started by this

Setting	Function
	time, the job expires and cannot be executed. This field is optional and if nothing is entered, the job does not expire.

NOTICE:
When **Read** is the selected Job Type, the RM Device Programmer retrieves the codeplug of each radio associated with the job. Once the codeplug is uploaded to the RM Server, the previous configuration association for the selected radio is overwritten.

When **Write** is the selected Job Type, and the Connection Method is Over the Air, specific OTAP rules are enforced.

A **Start after** and **End before** range defined in this window is also subject to Server to RM Device Programmer polling (for radio presence) at 30 minute intervals; therefore, the user must define a job Start and End Time range that allows for this 30 minute polling interval.

Jobs stored in the Server (waiting for radio presence to be detected) use the Time Zone of the Server.

The same radio cannot be selected for more than one job at a time.

1.1.3.1

Scheduling Jobs in Radio Management

The scheduling of jobs is performed within the **Schedule Job** window of **Radio View**.

Jobs can be scheduled to occur immediately or within a specific window of time.

NOTICE: The RM Device Programmer processes scheduled jobs when the presence of the radio is detected.

CAUTION:
When upgrading the radio firmware and modifying the configuration, using the **USB + Wireless (LAN)** connection method, it is highly recommended to perform two separate write jobs. Performing these tasks in a single write job causes the radio to reset twice.

First, upgrade the radio firmware by scheduling a write job. When the firmware write job is complete, register the new feature, configure the radio settings for the new feature, and then schedule a second write job.

IMPORTANT:
The user must perform a schedule read before performing a schedule write for new configuration to take effect.

Procedure:

1. From **Radio View**, select the relevant radio or radios.
2. Select the **Scheduler** menu.

   NOTICE: The **Schedule Job** window can also be opened by right-clicking on the selected radios and selecting **Schedule Job** from the pop-up menu or by selecting the **Schedule job** shortcut above the search field.
3. From the **Job Type** section, perform one of the following actions:
   - Select **Write** to schedule a write job for one or more radios.
   - Select **Switchover** to schedule a switchover job.
   - Select **Read** to schedule a read job.
   - Select **Generate configuration** to create a configuration from radio data.
   - Select **Apply to radio** to assign the configuration to the radio.

4 Select the preferred **Connection Method**.

The following connection methods are supported:

- **USB + Wireless (LAN)**
- **IP Program**
- **Over the Air**
- **Any**

See Scheduler in Radio Management on page 128 for connection method descriptions.

NOTICE:
When **Write** is the selected Job Type, and the Connection Method is **Over the Air** , specific OTAP rules are enforced.

Language Packs can only be sent Over The Air in combination with firmware. If the firmware does not need to be updated, a USB connection is required.

The connection method configured for a Scheduled Job must match the connection method configured for the RM Device Programmer. See RM Device Programmer Settings on page 163.

5 Optional: To **Suppress ARS after Switchover**, enable the check box.

6 Optional: If **Suppress ARS after Switchover** is enabled, define the **Switchover Timer**.

7 In the **Job Name** field, enter a relevant name for the job.

8 In the **Time Zone** field, select the relevant time zone from the drop-down list.

9 In the **Start after** fields, select the start date (in day-month-year format) and start time (in a 24-hour format).

NOTICE: Clicking in the date field, enables a drop-down arrow that allows the user to select the date from a calendar. The time can be manually entered or selected, in one minute increments, using the up and down arrows.

10 In the **End after** fields, select the end date (in day-month-year format) and end time (in a 24-hour format).

11 Click **OK**.

1.1.4
Radio View

The **Radio View** window displays radio-specific data for all radios currently stored in the Radio Management Server. See The Radio Management (RM) Server on page 144.

When the **Radio View** icon is selected, a list of radios, either imported from codeplugs or read into the RM server, are listed in the table. See Radio View Table on page 132.

The following operations are supported in **Radio View**:

- Add and Import Radios
- Edit and Select Configurations
- Compare Configurations
- Schedule and Cancel Jobs
- Group Radios
- Analyze a Radio Configuration

Each row in the table represents a unique radio/configuration combination. The RM Job Processor automatically validates and stores all data edits.

When a radio is selected from the list, the programming pane displays shortcuts to **Show Details**, **Edit Configuration**, **Analyze**, and **Schedule Job**. See Row Selection in Radio Management on page 69.

The columns displayed in the programming pane can be arranged and hidden to show only those columns of data that are relevant. See Arrange and Hide Columns in Radio Management on page 70.

Radio View Table

The radio fields that are listed in columns in the table can be customized by the user. By default, the more common fields are displayed. Fields such as **Serial Number**, **Radio Alias**, **Configuration**, **Group**, **Modified**, **Job Status**, and so on. See Radio View Table on page 138.

To see all the fields that are displayed for each radio, select and drag the scroll bar at the bottom of the table to the right. The user can also add and remove field columns from the table by right-clicking on any column heading. See Arrange and Hide Columns in Radio Management on page 70.

Operational Buttons in Radio View

The operational buttons allows the user to add, import, delete, or export data to and from the RM Server database. If an operational button is not enabled for the selected row, then the requested operation is not supported.

Table 34: Operational Buttons in Radios View

Button	Description
	The Add button is used to add devices to the table.
	Allows the user to perform additional operations based on the current view: In **Radio View**, the user can **Add**, **Import**, or **Export** codeplug files to and from the RM Server. In **Configuration View**, the user can **Add**, **Import**, or **Export** configuration files to and from the RM Server. When editing configurations, the user can **Add Set**, **Add Copy** at the configuration level. The user can also **Add Set**, **Add Multiple Sets**, or **Add Copies** when editing a set.
	The Edit button is not supported. Radio properties are unique to each radio and are not editable.
	The Delete button is enabled when a radio is selected and used to remove the selected item from the RM Server database.
	The Grid to File (export) button is enabled when a radio is selected and used to export the radio data for the selected rows to a comma-delimited CVS file.
	The File to Grid (import) button is used to import radio data from a comma-delimited CVS file.

Right-click Operations for Radios

The following operations can be performed on a selected radio:

Table 35: Right-click Operations for Radios

Operation	Description
Show Details	Displays Radio Information, Job History, and Feature Sets for the selected radio. This operation is also available as a shortcut located above the search field.
Delete	Deletes the selected radio from the RM Server database.
Select Group	Allows the user to assign the selected radio to a group or sub-group. See Creating and Managing Radio Groups on page 136.
Edit Configuration	Launches **Configuration View** and displays device information along with all Sets assigned to the configuration. From this view, the user can modify fields within all relevant Sets. See Manage Configurations.
Select Configuration	Launches the **Select Configuration** window that allows the user to assign a configuration to the selected radio.
Compare	Allows the user to compare differences in codeplug values within two configurations, assigned to radios, using the Compare Configurations on page 73 feature. The following operations are supported: **Assigned Configuration** Compares the codeplug values from the currently assigned configurations. **Last Programmed** Compares the codeplug values from the configurations last programmed to the radio. **NOTICE:** These selections are accessible when two radios are selected. See Comparing Configurations in Radio View on page 135.
Select IP System Settings	Launches the **Select IP System Settings** window.
Schedule Job	Launches the **Schedule Job** widow that allows the user to create a read or write programming job for the selected radio or radios.
Cancel Job	Allows the user to cancel a job for the currently selected radio.
Select MVO	Allows the user to assign a model, version, and option (MVO) to a new radio. See Model, Version, and Options on page 175.
Analyze	Allows the user to analyze a configuration for errors or warnings before creating a job. See Analyzing the Radio Configuration on page 72.
Reports	Launches report pages for **Channel Summary** and **Customer Handout**. These reports can be printed or saved to a local or network file location.
Upgrade Firmware	Searches for a compatible firmware version on the RM Server and updates the firmware accordingly. An error is generated if a compatible firmware version is not found on the RM Server.

Operation	Description
Package	Allows the user to assign Connect Plus option board packages to the selected radios. When selected, the **Packages Modified** flag is set on the **Modified** column. See Connect Plus Option Board Programming in RM on page 188.
Upgrade Language Pack	Compares the language pack versions currently read from the radio to those stored on the RM Server. If a newer language pack version is detected, the language pack is updated and the **Language Packs Modified** flag is set. A wired or wireless **Write** job must be scheduled to update the language packs on the radio and clear the **Language Packs Modified** flag. **NOTICE:** The **Language Packs Modified** flag is only set when a newer language pack version is detected on the RM server. In addition, write jobs for codeplug modifications can be scheduled **Over the Air** even if the **Language Packs Modified** flag is set. Language packs can only be written to the radio over a wired or wireless connection.
Export Radio	Allows the user to export the selected radio or radios to a codeplug byte array file (*.xpba) format. See Exporting Radio on page 86
Export Grid to File	Allows the user to export the selected radio or radios to a comma delimited file (*.csv) format. See Exporting Grid to File on page 87
Export GWCFG	Allows the user to export configuration files from the **Configuration View**. See Exporting GWCFGX on page 87
Modify Radio Password	Launches the Modify Radio Password widow that allows the user to override the current codeplug password for the configuration for the radio.
Copy Identity	Allows the user to copy identity data (such as IDs, Aliases, IPs, and so forth) from one radio to another.
Paste Identity	Allows the user to paste the copied identity data (such as IDs, Aliases, IPs, and so forth) from one radio to another. **NOTICE:** This feature is enabled when a radio is selected and its identity data is copied.

1.1.4.1

Comparing Configurations in Radio View

The comparing of configurations allows the user to validate field values within a relevant configuration before scheduling a job.

When and where to use: This procedure compares all fields within the configurations and displays all fields that have different values.

Procedure:

1. From **Radio View**, select the first radio (source) to compare.
2. Hold down the CTRL key on the keyboard and select the second radio (target) to compare.
3. Right-click over any of the selected radios and select **Compare→Assigned Configuration...** to compare partial codeplug fields.

   Select **Last Programmed...** to compare full codeplug fields.
4. Click the **Compare Results** tab to expand the **Compare Results** informational window.

   The differences between the source configuration and target configuration are displayed.

   NOTICE: Filter the differences by using the View by: **All**, **Different**, **Missing**, or **MVO** radio buttons.
   To navigate to the field, click a linkable value.

1.1.4.2

Radio Groups

Grouping radios within the Radio Management (RM) Configuration Client allows the user to organize and manage similar radio types for the RM system within a tree view structure.

From **Radio View**, the navigation pane for **Groups** allows the user to create groups and subgroups using right-click mouse operations.

The following operations can be performed on groups or subgroups:

- Create a group or subgroup
- Delete a group or subgroup
- Rename a group or subgroup
- Drag and drop a group or subgroup to a new location
- Expand or collapse group nodes within the tree view

Selecting **All** displays all radios in the RM system regardless of the group assignment. The assignment of radios to a group or subgroup is performed under the **Group** column in the table. One or more radios can be selected from the table and assigned to a group or subgroup. See Creating and Managing Radio Groups on page 136.

Table 36: Right-Click Operations for Radio Groups

Selection	Description
New Group	Allows the user to create a group or subgroup.
Delete	Allows the user to delete a group or subgroup. When a group containing radios or subgroups is deleted, a confirmation window opens and warns the user that the selected group and all subgroups will be deleted. Any radios assigned to the group or subgroup will no longer be assigned to a group.

Selection	Description
	The **Group** column in the table for all radios removed from a group or subgroup display `None`.
Rename	Allows the user to rename a group or subgroup.

1.1.4.2.1

Creating and Managing Radio Groups

Radio groups and subgroups are created and managed within the **Group** navigation pane. Once radio groups and subgroups are created, they can be renamed, deleted, or moved within the tree view structure.

Prerequisites: Radios must first be imported or read into the Radio Management (RM) Server before they can be assigned to a group or subgroup.

Procedure:

1 Click the **Radio View** icon to display the Radio view table.

2 Create, manage, or move a group or subgroup. Perform one of the following actions:

If…	Then…
If creating a group,	perform the following actions: **a** Right-click in the navigation pane and select **New Group**. **b** Enter a `name` for the new group.
If creating a subgroup,	perform the following actions: **a** Right-click the relevant group or subgroup and select **New Group**. **b** Enter a `name` for the new subgroup.
If deleting a group or subgroup,	perform the following actions: **a** Select the relevant group or subgroup. **b** Right-click and select **Delete**. **NOTICE:** A confirmation window opens and warns the user that the selected group and all subgroups will be deleted. Any radios assigned to the group or sub-group will no longer be assigned to a group.
If renaming a group or subgroup,	perform the following actions: **a** Select the relevant group or subgroup. **b** Right-click and select **Rename**. **c** Enter a new `name` for the group or subgroup.
If moving a group or subgroup,	perform the following actions: **a** Select the relevant group or subgroup.

If…	Then…
	b Using standard drag and drop functionality, move the group or subgroup to its new location. **NOTICE:** Groups or subgroups can be moved and placed over an existing group or between groups. Any radios assigned to the group or subgroup move with the group or subgroup to the new location.

3 Assign radios to a group or subgroup. Perform one of the following actions:

If…	Then…
If assigning a single radio,	perform the following actions: **a** From the navigation pane, select **All** to display all radios in the RM system. **b** From the table, select the **Group** column drop-down list for a radio, expand the nodes if necessary, and select the relevant group or subgroup. **c** Repeat the previous step until all radios for the group or subgroup are assigned.
If assigning multiple radios,	perform the following actions: **a** From the navigation pane, select **All** to display all radios in the RM system. **b** Select all the relevant radios in the table using standard SHIFT and CRTL key functionality. **c** Right-click any highlighted row and select **Select Group**. **d** From the **Select Group** window, expand the nodes if necessary, and select the relevant group or subgroup. **e** Click **OK**.

NOTICE:
A radio can only be assigned to one group or subgroup.

If **None** is the only value in the **Group** drop-down list, then no radio groups exist in the navigation pane.

Once all radios are assigned to a group or subgroup, selecting the group from the navigation pane displays only those radios belonging to the group or subgroup in the table.

1.1.4.3
Radio View Table

The following table defines all the column fields that are supported in **Radio View**.

Table 37: Field Columns in Radio View Table

Column	Description	Notes
Serial Number	Displays the serial number of the radio stored in the RM Server.	Read-only
Radio Alias	Displays and allows the direct editing of the Radio Name.	This field can be edited.
Configuration	A unique file that resides on the RM Server and contains all the assigned Sets for the radio.	
Group	See Radio Groups on page 135.	
Modified	Displays the color-based indicators alerting the user of a certain modified status for the radio. The user can hover on the word "Modified" in the column header to retrieve the color legend: 	
Job Status	Displays the non-editable status of the radio and any current job that may be associated with the radio.	
Job Name	Displays the non-editable name given to the Job when the job was created. The value is not editable once a Job has been created.	
Model Number	Displays the non-editable model number of the radio.	
Region	Displays the geographical region of the radio. For example, NA for North America.	
IP System Setting	Displays the IP address of the computer that has a radio plugged into it via USB.	
Configure Password Per Device	Displays whether or not a password was set for the radio. The password is required to edit the configuration of a radio.	

Column	Description	Notes
Check for Password	Displays the configured access (**Read** or **ReadWrite**) for radios supporting the **Modify Radio Password** feature. If no password is assigned to the radio, then None is displayed.	Read-only
OTAR Fixed IP	Displays the OTA (Over The Air) Fixed IP Address (FIP) for all codeplug (record / rows) within Radio View. When a radio's IP Address is known it can be used for direct Device Programmer - POP25 / OTAP to radio communications, eliminating the need for ARS, which is also known as FIP Mode.	
Radio ID	Displays and allows the direct editing of a radio's Radio ID.	
CAI	The Common Air Interface is editable and is used by radios during digital communications.	
WAVE 5000 Username	This field allows the user to enter the WAVE 5000™ user ID.	This is a radio-wide feature.
WAVE 5000 Password	This field allows the user to enter the WAVE 5000™ password.	This is a radio-wide feature.
5 Tone ID	Display the Radio ID for radios that support to 5 Tone feature.	This field can be edited.
Radio IP	Displays the IP address assigned to the radio.	
Accessory IP	Displays the non-editable Accessory IP address that is assigned to the radio. The host ID portion of the Radio ID is incremented by one. For example, if the Radio IP is 192.168.1.2 then the Accessory IP is 192.168.1.3	
Peer IP	Displays the Serial Link 1 Peer IP Address of all radio-codeplug (record / rows) within Radio View. This IP Address is assigned to the MC (Mobile Computer) end of the serial link1.	
Bluetooth DUN Subscriber IP	Displays the Bluetooth DUN (Dial Up Network) Subscriber IP Address of all radio-codeplug (record / rows) within Radio View. This IP Address is assigned to the Subscriber Unit (SU = radio) end of the Bluetooth (BT) link.	
Bluetooth DUN Peer IP	Displays the Bluetooth DUN (Dial Up Network) Peer IP Address of all radio-codeplug (record / rows) within Radio View. This IP Address is assigned to the MC (Mobile Computer) end of the Bluetooth (BT) link and is	

Column	Description	Notes
	also used to address the MC (Mobile Computer) via over-the-air packet data.	
Bluetooth Friendly Name	Displays the radio-user recognizable Bluetooth name of all radio-codeplug (record / rows) within Radio View. This name identifies the radio to a paired and connected Bluetooth device.	
Username	Allows the user to enter a Automatic Registration Service or User Authentication default login User name for all radio-codeplug (record / rows) within Radio View. This User name can apply for all ARS "Server" enabled Data Profiles. When the Soft ID feature is enabled, this User name is also used for all Conventional dispatch ASTRO-enabled channels. HGWorkflowNote.jpg	
User PIN	Allows the user to enter a default Automatic Registration Service login PIN (Personal Identification Number) or a User Authentication PIN / Password for all radio-codeplug (record / rows) within Radio View. This PIN / Password can apply for all ARS "Server" enabled Data Profiles (see ARS Mode). Asterisks are displayed when entering a user pin.	
User Login Unit ID	Displays a User Authentication default login Unit ID for all radio-codeplug (record / rows) within Radio View. This ID can be used to designate all radio-uses within a specific vehicle or squad. This ID applies for all ARS "Server" enabled Data Profiles.	
Group Data Talk Group	Displays the talk group that is used for the Group Data session to transmit the firmware (and optionally language pack) over the air through the Group Data Gateway. This value is not editable and gets updated once the radio has started downloading the firmware.	
Group Data Job ID		
ASK Required	Displays the Owner System Key Type, Owner System ID, Write Protect, and ASK (Advanced System Key) Required status of all codeplug (record / rows) within this Radio View. Enabling this feature ensures that only Advanced (Hardware) Keys can be loaded into RM and assigned for use to Trunking Systems; Software System Key Files are not able to be assigned.	

Column	Description	Notes
	When disabled, both Software Keys and Hardware Keys loaded into RM may be assigned for use in a Trunking System's System ID field. Additionally, disabling this features gives the user the ability to disable a radio's Write-Protected status.	
Owner System Key Type	Displays the Owner System Key Type of all codeplug (record / rows) within Radio View.	The Owner Advanced "Key Type" and its corresponding "Owner System ID" or "Owner WACN ID" are initially determined for the radio and it’s codeplugs at the time of the radio's original purchase.
Owner System ID (Hex)	Displays the Owner System ID of all codeplug (record / rows) within Radio View.	The Owner Advanced "Key Type" and its corresponding "Owner System ID" or "Owner WACN ID" are initially determined for the radio and it’s codeplugs at the time of the radio's original purchase.
Write Protect	Displays the Write Protect of all codeplug (record / rows) within Radio View. When enabled, is used to Write Protect the radio. When disabled, is used to disable Write Protect for the radio.	Disabling ASK Required will disable the Write-Protected status in the radio.
Firmware Version	Displays the non-editable firmware version of the radio.	Firmware versions generally control which features are available on a radio. Typically a newer firmware version will support new or improved features than an older version.
Language Pack	Displays any language packs currently assigned to the radio.	
Voice Announcements	Displays the number of currently assigned voice announcements for the radio.	
Codeplug Version	Displays the non-editable codeplug version of the radio.	Codeplug versions describe the format of the configuration information that is programmed into a radio and are generally tied to specific firmware versions.
Feature Status	Displays the non-editable list of software features and their statuses, whether the listed feature is free or available for purchase.	
Comments	An editable parameter where the user can put in any notes or comments about a radio. For example, the user could use this field to	

Column	Description	Notes
	enter a customer's name. Since the information entered is searchable, it would provide a quick way to look for all the radios for a specific customer.	

1.1.5

Radio System View

The **Radio System View** displays radio specific conventional or trunking radio IDs for all radios within the RM Server database. See The Radio Management (RM) Server on page 144.

The radio grouping strategy organizes and determines the data that is accessed from the RM Server and displayed in this view. See Radio Groups on page 135. Each row in the table represents a single conventional or trunking system.

NOTICE: All data edits are automatically validated and saved when entered.

The information that is displayed in the table can be filtered by selecting **All**, **Radios**, or **Systems**.

When filtered for **Radios**, the table lists the number of systems assigned to each radio. Selecting **Serial Number** link, displays the systems in which that radio is assigned. Selecting the **Serial Number** a second time, opens the **View Radio Details** window containing Radio Information, Job History, and Feature Sets for the radio.

When filtered by **Systems**, the table lists the number of radios assigned to each system. Selecting the **Serial Number** link, displays the list of radios assigned to the system.

The following radio system information is displayed:

- Serial Number
- Device ID
- Capacity Max Authentication key
- Configuration Name
- System ID
- System Name
- Device Alias
- Communication Type
- Sub-system Type
- Redundancy Group ID
- Site ID

Arrange Columns in Radio Management

Columns in the table can be arranged by dragging any column by the header section to a new location. Once a column is selected and dragged, arrows appear above and below the header section to indicate the new location.

1.1.6

Job View

The **Job View** displays historical information related to all jobs processed and stored in the Radio Management (RM) Server. The initial view displays all jobs performed in the system. The **View by** selection allows the user to filter all jobs by **Programming Jobs** or **Operational Jobs**.

Programming Jobs
This selection displays jobs that were processed as either Read, or Write jobs in **Schedule Job** Window.

Operational Jobs
This selection displays jobs that are operations performed in the RM Configuration Client such as importing and exporting radios, scheduling jobs, selecting and deleting configuration, as well as many others.

The following fields are supported in the Job View table:

Column	Description
Job Name	The name assigned to the job when scheduled in the **Schedule Job** window.
Type	The job type configured in the **Schedule Job** window.
Created Time	The date and time that the job was created in the **Schedule Job** window.
Start Time	The date and time that the job is scheduled to start as entered in the **Start after** field in the **Schedule Job** window.
End Time	The date and time that the job is scheduled to end as entered in the **End before** field in the **Schedule Job** window.
Total	Displays the number of radios scheduled for the job.
Completed	Displays the number of radios complete in the scheduled job.

Job Name Selection

The **Job Name** column displays all jobs as selectable links. When a user clicks the Job Name link, the following additional information is provided:

Column	Description
Item	The name of the file that was selected as part of the job.
Status	The following statues are supported: **Pending** A scheduled job has not started, due to a radio not being detected on a Device Programmer or the Job Processor is busy processing another job. **Running** The job has started and is in progress. **Canceled** The job was canceled by the user. **Completed** The job was successful. **Failed** The job has failed. The reason for the failure is described in the Reason column.

Column	Description
	Expired The **End date** has passed and the job was not performed and/or executed.
Executed Date	This is the actual date and time that the scheduled job was executed.
Reason	This field is left blank when radio jobs are completed successfully. If a job fails, a description as to the cause of the failure appears.

Arrange Columns in Application

Columns in the table can be arranged by dragging any column by the header section to a new location. Once a column is selected and dragged, arrows appear above and below the header section to indicate the new location.

1.2

The Radio Management (RM) Server

The Radio Management (RM) Server is the central database that stores radio data from read/write operations and job operations in the Radio Management (RM) system.

NOTICE: Only one RM Server is allowed per system.

The functions of the RM Server are as follows:

- Stores individual radio identity data, read from the radio or codeplug.
- Stores radio data that can be edited with the Radio Management (RM) Configuration Client.
- Stores job details created with the Scheduler in the RM Configuration Client.
- Stores all radio-specific read, write, and switchover history that can be viewed in **Radio View**.
- The RM Job Processor and RM Device Programmer use the data in the RM Server to complete the job. Once a job is complete, the job status is stored back into the RM Server.

NOTICE:
The RM Server Utility is a component of the RM Server and is always available to view or manage certain server behaviors and database-related jobs. See The RM Server Utility on page 145.

The RM Server Utility is used to configure User Authorization on page 149 to access the RM Server from the RMC Client.

Date and time information stored in the RM Server uses the time zone of the server.

Radio presence detected by the RM Device Programmer causes the RM Server to transfer job instructions and/or job data for relevant **Read**, **Write**, and **Switchover** jobs.

Because validation of codeplug and configuration data can be very CPU intensive, it can be beneficial to isolate the RM Server, the Radio Management Configuration Client, the RM Device Programmer, and the RM Job Processor on separate CPU devices.

Many RM Job Processors may exist on several different computers/devices, all of which are connected to the same RM Server.

Many RM Device Programmers may exist on several different computers/devices, all of which are connected to the same RM Server.

Many Radio Management Configuration Clients may exist on several different computers/devices, all of which are connected to the same RM Server.

1.2.1
The RM Server Utility

The RM Server Utility is colocated with the RM Server and is launched from the Windows start icon by selecting **All Programs→Motorola→RM Server→RM Server Utility**.

The Radio Management (RM) Server Utility is used by an administrator to perform the following operations:

Status
Allows the user to monitor the RM services installed on the computer.

See Status on page 145.

Database Settings
Allows the user to backup and restore the RM database as well as clear any RM database locks.

See Database Settings on page 146.

User Authorization
Allows an administrator to configure access control and credentials for users and identify user roles for accessing the RM system from the RM Client.

See User Authorization on page 149.

IMPORTANT:
The user must be an administrator of the local machine and have an RM Administrator role to enable this feature.

See Enabling User Authorization Feature on page 149.

Machine Authorization
Allows an administrator to secure the RM system by allowing authorized computers to run the RM Device Programmer and/or RM Job Processor Windows services.

See Machine Authorization on page 154.

IMPORTANT:
The user must be an administrator of the local machine and have an RM Administrator role to enable this feature.

See Enabling Machine Authorization Feature on page 154.

Network Settings
Allows an administrator to define a range of ports that are allowed for accessing the RM Server and Job Server.

See Network Settings on page 158.

Options
Allows the user to configure language, security, and auto-add options.

See Options on page 160.

1.2.1.1
Status

The **Status** selection allows the user to monitor the RM services installed on the computer.

RM Services

The following RM services are supported:

Discovery Server
This service provides authentication functions to Radio Management.

Job Server
This service handles connections to RM Device Programmers and RM Job Processors.

RM Server
This service handles connections to Radio Management Configuration Clients.

RMServer DB
This service identifies the location and version for the Radio Management database.

Status Table

Each RM service is displayed in a table structure with the following columns:

Service Name
Defines the name of the RM service.

Location
Defines the URL of the service on the computer.

Registered Status
Displays the status of the service within the RM System. The column can display `Available`, `Unavailable`, or `Unknown`.

Service Status
Displays the current operational state of the service within the RM System. The column can display `Running` or `Stopped`.

Version
Displays the current version for the RM service running on the computer. The column can also display `Unavailable` or `Unknown`.

Status Buttons

The following buttons are supported:

Stop All / Start All
The **Stop All** button is used to refresh all of the RM services on the computer. This button physically resets all server connections and should only be used when there are no jobs running. Once the services are stopped, the text on the button changes to **Start All**. The **Start All** button restarts all of the RM services.

Refresh
The **Refresh** button updates the table display to show current settings.

1.2.1.2
Database Settings

The **Database Settings** selection is used to back up and restore the RM database as well as clear any RM database locks.

Database Backup

The **Database Backup** section is used to back up the RM database. This function is used to back up the RM database when other backup capabilities are not available. The RM database cannot be backed up using this function when deployed on a remote database server.

WARNING: When performing a back up function, do not make updates using the Radio Management application as it may affect the database records.

See Backing Up the RM Server Database on page 148.

The following fields and buttons are used to perform the backup function:

Destination
Defines the name of a Windows folder, either on the local computer or the full path of a network share.

Browse Button
Allows the user to browse for a folder location on the computer or network.

Enable Password Check box
Allows the user to enable the database backup password feature. When enabled, the **Password** field becomes visible and allows the user to add a password for the database backup.

Backup Button
Performs the backup function for the RM database to the specified destination. A confirmation message is displayed when selected.

Database Restore

The **Database Restore** section is used to restore the RM database from a backup.

See Restoring the RM Server Database on page 148.

The following field and buttons are used to perform the restore function:

Source
Defines the name of the Windows folder, either on the local computer or the full path of a network share.

Browse Button
Allows the user to browse for a source location on the computer or network.

Restore Button
Performs the restore function for the RM database from the source location. A confirmation message is displayed when selected.

Clear Database Locks

Locks are applied to shared RM components, such as Configurations and Sets when they are edited. A user can maintain a lock indefinitely, or an error can lock a shared RM component after editing. RM components that are locked are not available for Jobs.

Clear Locks Button
Allows the user to remove the locks on all RM database components.

When the **Clear Locks** button is selected, the user is presented with a warning message to confirm the unlocking of records in the RM database.

Add Local Administrators and Restart the Application

This feature is used to ensure that all administrators of the local machine are assigned the role of RM Administrators. When the **Add and Restart** button is selected, all administrators of the local machine are assigned the role of RM Administrators. Once all local administrators are added, the RM Server Utility shuts down and restarts automatically.

Rebuild Database Indexes

When data is added, deleted, or modified in the RM Server database, the database indexes may become fragmented over time. This can lead to poor performance when searching, sorting, or retrieving data. This feature allows an administrator to run a defragmentation of the RM Server database indexes.

WARNING: Before running this feature, ensure that no jobs are scheduled or running and that no users are accessing the RM Server.

When the **Rebuild Indexes** button is selected, the user is warned that the database indexes will be rebuilt. The user must select **Yes** to continue. An animated progress indicator shows all RM Windows services being stopped while the database indexes are defragmented. Once the process is completed, the RM Server Utility is restarted.

NOTICE: Perform this operation when functions such as the listing of data from any RM view or the modification of a configuration is very slow. The duration of the operation is dependent on the amount of data stored on the database and the level of defragmentation that exists. The operation can last from several minutes to half an hour.

1.2.1.2.1
Backing Up the RM Server Database

The RM Server database should be backed up when new radios and data is added to the RM system.

This operation ensures that the RM system can be restored to its operation state in the event of a database error or when the RM system is updated to a newer version.

Procedure:

1. From the **RM Server Utility**, select **RM Database Management**.
2. From the **Database Backup** section, click **Browse.**

   The **Browse For Folder** window opens and allows the user to select an existing folder location or create a new folder to store the backup.
3. Optional: Select the **Enable Password** check box and enter a **Password** to password protect the backup folder.

   Selecting the **eye** icon to the right of the **Password** field allows the user to view the password.
4. Click **Backup** to initiate the backup operation.

   A confirmation Warning message appears and warns against performing any operations using the RMC Client while the backup operation is in progress.
5. Click **Yes** to confirm the backup operation.

   A folder is created and named with the current date and time in the **Destination** folder.

1.2.1.2.2
Restoring the RM Server Database

Restoring the RM Server database allows an administrator to populate the database with a good known backup.

Procedure:

1. From the **RM Server Utility**, select **Database Settings**.
2. From the **Database Restore** section, click **Browse.**

   The **Browse For Folder** window opens.
3. Locate the **Source** folder that contains the RM Server database backup folder.
4. Click **Restore** to initiate the restore operation.

   A confirmation Warning message appears.
5. Click **Yes** to confirm the restore operation.

   If a password was assigned to the backup folder, a **Restore** password window opens.

6 Optional: If the backup folder was password protection, enter the **Password** and click **OK**.

NOTICE: In the event of an error during the Restore operation, a valid backup must be restored to populate the database with usable data.

The backup of the RM Server database is restored and the RM Server Utility restarts.

1.2.1.3
User Authorization

The **User Authorization** selection allows an administrator to configure users and roles for accessing the RM system. Local machine, domain, or non-domain users can be configured to access the RM system. **User Authorization** displays a list of users or roles that have access to the RM System.

IMPORTANT:
The user must be an administrator of the local machine and have an RM Administrator role to enable this feature.

See Enabling User Authorization Feature on page 149.

The **Allow all Windows Authenticated users** check box, when **checked**, allows all users of the local RM Server computer and any domain users, authenticated by the RM Server, access through the RM Configuration Client without having to be added to the RM user list and without having to log on. The ability of the RM Server to authenticate a domain user on the domain controller is dependent on the security settings of the Domain controller.

When the **Allow all Windows Authenticated users** check box is **unchecked**, all users must be added to the RM user list in order to access the RM Server through the RM Configuration Client. This is the most secure method for controlling access to the RM Server. See Adding Users to the RM System on page 150.

NOTICE:
All non-domain users must be added regardless of the **Allow all Windows Authenticated users** check box setting.

Users and **Roles** can be viewed by selecting the relevant radio button.

The administrator can **Add** , **Edit** , or **Delete** users and roles from the RM system.

NOTICE: By default, the **RM Server Utility** provides **RM Client User** and **RM Administrator** roles.
In a MOTOTRBO PCR RM system, the **RM Client** role is reserved for future use. The **RM Administrator** role allows a user access to the **User Authorization** and **Machine Authorization** screens.

The following operations are supported:

1.2.1.3.1
Enabling User Authorization Feature

This feature is enabled when the user running the RM Server Utility has an **RM Administrator** role.

Prerequisites: The following conditions must be met in order to use the RM Server Utility for user authorization:

- The RM Server Utility application must run on the RM Server machine.
- The user must be a local Administrator on the RM Server machine.

When and where to use:

Use this procedure to verify that the user is a local Administrator.

Procedure:

1. Open a **cmd prompt** window on the RM Server machine.
2. Enter `lusrmgr.msc`

   The **Local Users and Groups (Local)** management console opens.
3. Select the **Groups** folder from the left pane.
4. From the right pane, right-click **Administrators** and select **Properties**.
5. Verify that the user account is listed in the Members section.

   NOTICE: The user account must be listed as an individual member of this group. If the current user is not a member of the Administrators group, either add the user to the group or log in to the server machine using an account that is a member of the group.

1.2.1.3.2
Adding Users to the RM System

Access to the RM Server requires users to be added to the RM system under the **User Authorization** section of the RM Server Utility.

NOTICE:
Users of the local RM Server computer and domain users must be added when the **Allow all Windows Authenticated users** is unchecked. All non-domain users must be added regardless of the **Allow all Windows Authenticated users** check box setting.

When and where to use: The RM Server Utility is colocated with the RM Server. Perform a search in Windows for **RM Server Utility** and launch the application.

Procedure:

1. From the **RM Server Utility**, select **User Authorization**.
2. Ensure that **View by** is set to **Users**.
3. Click the **Add** icon to add users. Perform the following actions:

   NOTICE:
   The selections available from the **Add** icon depend on whether the RM system is connected to a domain or a local network.

If…	Then…
If adding a domain user,	perform the following actions: **a** Select **Add Users from Domain**. **b** From the **Select Users** window, click **Advanced**. **c** From the **Common Queries** section, enter the name of a user as identified in the domain. **d** Click **Find Now**. **e** From the **Search results** section, select one or more users from the list. **f** Press **OK**. The user now appears in the list of users in the **User Authorization** window.

If…	Then…
If adding a non-domain user,	perform the following actions: **a** Select **Add Non Domain User**. **b** From the **New User** window, enter the users credentials as they appear in the window. The following fields are required: • **Username** • **Password** (seven characters minimum) • **Confirm New Password** **NOTICE:** The **Show Password** check box can be used to view the password text for verification purposes. • All other fields are optional. **c** Press **OK**. The user now appears in the list of users in the **User Authorization** window.
If adding a local computer user,	perform the following actions: Use this procedure to add specific users from the local computer. **a** Select **Add Users from Local Computer**. **b** From the **Select Users** window, click **Advanced**. **c** From the **Common Queries** section, click **Find Now**. **d** From the **Search results** section, select one or more users from the list. **e** Press **OK**. **f** From the **Select Users** window, click **OK**. The user now appears in the list of users in the **User Authorization** window.

Postrequisites: Once a new user is added to the RM system, assign a role to the user to provide the required permissions. See Updating Authorized Users and Assigning Roles on page 152.

1.2.1.3.3

Deleting Users from the RM System

Users that are no longer required to access the RM Server can be deleted from the RM system using the RM Server Utility.

When and where to use: The RM Server Utility is colocated with the RM Server. Perform a search in Windows for **RM Server Utility** and launch the application.

Procedure:

1. From the **RM Server Utility**, select **User Authorization**.
2. Ensure that **View by** is set to **Users**.
3. Select one or more users from the list.

4 Click the **Delete** icon.

A **Member Deletion Warning** confirmation window opens.

5 Click Yes to confirm and deleted the selected user.

1.2.1.3.4

Updating Authorized Users and Assigning Roles

Once users are added to User Authorization, the administrator can update and configure additional details for each user.

Procedure:

1 From the **User Authorization** window, set **View by** to **Users** and select a user from the list.

2 Click the **Edit** icon.

3 From the **General** section, update or configure the following fields:

Username

This field is read-only for domain users.

For non-domain users, this field defines the name used by the user when logging in to the RM system.

Description

Valid only for non-domain users.

Enter a description that defines the user.

Email

Valid only for non-domain users.

Enter a valid email for the user.

Disabled

Allows the administrator to disable an authorized user.

Locked Out

Valid only for non-domain users.

When enabled (checked), the user has exceeded the maximum number of incorrect password entries. Only an administrator can unlock the account.

NOTICE: The maximum number of invalid password entries is a Windows feature and is set in the Local Security Policy by the system administrator. The default setting is 0 (Disabled) up to a maximum of 999 before a lockout occurs.

User must change password on next login

Valid only for non-domain users.

When checked, the user must change the assigned password when logging on to the RM Server the first time.

Password (Reset Password)

Valid only for non-domain users.

The **Reset Password** button allows the administrator to create a new password for the user.

4 From the **Roles** section, check one or more roles for the selected user.

NOTICE:
The **RM Administrator** role can only be assigned to local administrators. See Assigning Local Administrators to the RM Administrator Role.

Domain users must be added individually to the local Administrator group of the machine in order to be assigned as an RM Administrator.

The **RM Client User** role is assigned to all authorized users by default.

5 Click **Save** and then **Close**.

The selected users now show the roles assigned to them under the Roles column of the **User Authorization** window.

1.2.1.3.5
Adding Roles in User Authorization

The creation of roles in an RM system allows an administrator to group users and configure permissions for accessing authorization screens in the RM Server Utility and perform certain functions in an RM system.

NOTICE: By default, the **RM Server Utility** provides **RM Client User** and **RM Administrator** roles.
In a MOTOTRBO PCR RM system, the **RM Client** role is reserved for future use. The **RM Administrator** role allows a user access to the **User Authorization** and **Machine Authorization** screens.

Procedure:

1 From the **RM Server Utility**, select **User Authorization**.

2 From **View by**, select the **Roles** radio button.

3 Click the **Add** icon.

4 In the **Add Role** window, enter a **name** for the role and a **description**.

5 Click **OK**.

1.2.1.3.6
Default RM Administrator Role Members

By default, all local Windows administrators on the server machine are automatically assigned the RM Administrator role when the RM Server Utility is launched for the first time.

However, new local Windows administrators added to the machine after the initial launch of the RM Server Utility are not automatically assigned the RM Administrator role.

RM Administrator Role Assignment for New Local Administrators

In order to assign additional local Windows administrators the RM Administrator role, the current user of the RM Server Utility must have RM Administrator role privileges. With the User Authorization feature enabled, assign new local administrators the RM Administrator role. See Assigning Local Administrators to the RM Administrator Role.

Reinitialization of RM Administrator Role

If necessary, the RM Administrator role can be repopulated by automatically assigning all local Windows administrators on the server machine to the RM Administrator role. See Reinitializing the RM Administrator Role.

1.2.1.4

Machine Authorization

The **Machine Authorization** selection opens the **Authorized Computers** window and allows an RM administrator to secure the RM system by allowing only authorized computers to run the RM Device Programmer and/or RM Job Processor Windows services.

IMPORTANT:
The user must be an administrator of the local machine and have an RM Administrator role to enable this feature.

See Enabling Machine Authorization Feature on page 154.

NOTICE: By default, any computer running the RMC Client and connected to the RM Server can install and run the RM Device Programmer and/or RM Job Processor services. To prevent unauthorized operation of these RM components, the RM administrator must check the **Enable computer authorization** check box.

Once the **Enable computer authorization** check box is selected, the administrator can **Add** or **Delete** computers from the RM system.

To assign the Device Programmer and/or Job Processor services to an authorized computer, the RM administrator can check one or both services. The assignment of RM components can also be performed by selecting a computer and clicking **Edit** .

The following operations are supported:

1.2.1.4.1

Enabling Machine Authorization Feature

This feature is enabled when the user running the RM Server Utility has an **RM Administrator** role.

Prerequisites: The following conditions must be met in order to use the RM Server Utility for user authorization:

- The RM Server Utility application must run on the RM Server machine.
- The user must be a local Administrator on the RM Server machine.

When and where to use:
Use this procedure to verify that the user is a local Administrator.

Procedure:

1. Open a **cmd prompt** window on the RM Server machine.
2. Enter `lusrmgr.msc`

   The **Local Users and Groups (Local)** management console opens.
3. Select the **Groups** folder from the left pane.
4. From the right pane, right-click **Administrators** and select **Properties**.
5. Verify that the user account is listed in the Members section.

   NOTICE: The user account must be listed as an individual member of this group. If the current user is not a member of the Administrators group, either add the user to the group or log in to the server machine using an account that is a member of the group.

1.2.1.4.2

Adding Computers to the RM System

The RM administrator can authorize domain and non-domain computers to run the RM Device Programmer and/or RM Job Processor Windows services within an RM system.

When and where to use: The RM Server Utility is colocated with the RM Server. Perform a search in Windows for **RM Server Utility** and launch the application.

Procedure:

1. From the **RM Server Utility**, select **Machine Authorization**.
2. Check **Enable computer authorization**.
3. Click the **Add** icon and perform one of the following actions:

   NOTICE:
   The selections available from the **Add** icon depend on whether the RM system is connected to a domain or a local network.

If…	Then…
If adding a domain computer,	perform the following actions: **a** Select **Add Computers from Domain**. **b** From the Select Computer window, click **Advanced**. **c** From the **Common Queries** section, enter the name of a computer as identified in the domain. **d** Click **Find Now**. **e** From the **Search results** section, select one or more computers from the list. **f** Press **OK**. **g** From the **Select Computer** window, click **OK**. The computer now appears in the list in the **User Authorization** window. **h** Select one or both of the RM system Windows services (**Device Programmer**, **Job Processor**).
If adding a non-domain computer,	perform the following actions: **a** Select **Add Non Domain Computer**. **b** From the **Off-domain machine registration** window, enter the machine credentials as they appear in the window. • Host Name • Password

If…	Then…
	• Confirm Password **IMPORTANT:** This password must then be entered into the **One-Time Password** field of the RM Component (Job Processor or Device Programmer) configuration in order to register the computer running the component. See Registering a Non-Domain Computer using a One-Time Password on page 157. **NOTICE:** The **Show Password** check box can be used to view the password text for verification purposes. **c** Press **OK**. The computer now appears in the list in the **User Authorization** window. **d** Select one or both of the RM system Windows services (**Device Programmer**, **Job Processor**).

1.2.1.4.3

Deleting Computers from the RM System

Computers that are no longer required to access RM components (Device Programmer and Job Processor) can be deleted from the RM system.

When and where to use: The RM Server Utility is colocated with the RM Server. Perform a search in Windows for **RM Server Utility** and launch the application.

Procedure:

1. From the **RM Server Utility**, select **Machine Authorization**.
2. Select one or more computers from the list.
3. Click the **Delete** icon.

   A **Member Deletion Warning** confirmation window opens.
4. Click Yes to confirm and deleted the selected computer.

1.2.1.4.4

Updating Authorized Computers and Assigning Roles

Once computers are added to the list of Authorized Computers, the RM administrator can updated and configure additional settings for each computer.

Procedure:

1. From the **Authorized Computers** window, select a computer from the list.
2. Click the **Edit** icon.
3. From the **General** section, update or configure the following fields:

Name

This read-only field is the host name of the computer.

Disabled

Valid only for non-domain computers.

Allows the administrator to disable an authorized computer.

Locked Out

Valid only for non-domain computers.

When enabled (checked), the computer has exceeded the maximum number of incorrect password entries. Only an administrator can unlock the account.

NOTICE: The maximum number of invalid password entries is a Windows feature and is set in the Local Security Policy by the system administrator. The default setting is 0 (Disabled) up to a maximum of 999 before a lockout occurs.

Registered

Valid only for non-domain computers.

When enabled (checked), the machine has been registered with the RM system using the One-Time Password. See Registering a Non-Domain Computer using a One-Time Password on page 157.

Reset Password

Valid only for non-domain users.

The **Reset Password** button allows the administrator to create a new password for the computer.

4 From the **Roles** section, check one or more roles (Device Programmer, Job Processor) for the selected computer.

5 Click **Save** and then **Close**.

The selected computer now show the roles assigned to it under the Roles column of the **Machine Authorization** window.

1.2.1.4.5

Registering a Non-Domain Computer using a One-Time Password

The registration of a non-domain computer is required in order for the computer to access the Device Programmer and/or Job Processor.

Prerequisites:

After a non-domain computer (running Device Programmer or Job Processor) is added to the list of authorized computers, the non-domain computer must be registered with the RM Server using the password created in the Adding Computers to the RM System on page 155 procedure.

This is a one-time operation that must be performed after the following:

- A new non-domain computer has added to the list of authorized computer.
- Password Reset of an existing computer.

Procedure:

1 For Device Programmer, preform the following actions:

a Select **Start→All Programs→Motorola→RM Device Programmer→RM Device Monitor**.

b Click **Settings**.

2 For Job Processor, select **Start→All Programs→Motorola→RM Job Processor→RM Job Processor Config**.

3 Enter the **Address** and **Port** of the RM server.

4 In the **Authentication Method** field, select **One-Time Password**.

5 Enter the password used when the computer was added to the list of Authorized Computers.

6 Click **Test Connection**.

A pop-up window opens displaying `Connection was successful`.

7 Click **OK**.

The RM component service restarts.

1.2.1.4.6
Default RM Administrator Role Members

By default, all local Windows administrators on the server machine are automatically assigned the RM Administrator role when the RM Server Utility is launched for the first time.

However, new local Windows administrators added to the machine after the initial launch of the RM Server Utility are not automatically assigned the RM Administrator role.

RM Administrator Role Assignment for New Local Administrators

In order to assign additional local Windows administrators the RM Administrator role, the current user of the RM Server Utility must have RM Administrator role privileges. With the User Authorization feature enabled, assign new local administrators the RM Administrator role. See Assigning Local Administrators to the RM Administrator Role.

Reinitialization of RM Administrator Role

If necessary, the RM Administrator role can be repopulated by automatically assigning all local Windows administrators on the server machine to the RM Administrator role. See Reinitializing the RM Administrator Role.

1.2.1.5
Network Settings

The **Network Settings** selection allows users to define specific ports and/or a range of ports on the Windows firewall that are open for communication access to the RM Server and Job Server services.

RM Server

This Windows service handles all request coming from the RM Configuration Client.

The **Port Range** field is preconfigured with common TCP ports that are typically open and available for communication. The following TCP ports and TCP port ranges are defined by default for the RM Server:

- 49202
- 49205-49210
- 51020-51030
- 50003
- 65534

The user can use these default TCP ports or enter specific TCP ports opened on the Windows firewall. The **Apply** button is used to accept new TCP port values.

NOTICE: The **HTTPS (Port 443)** field is only visible for RM Servers running on the following operating systems:

- Window 8 and above
- Windows Server 2012 and above

Job Server

This Windows service handles all requests coming from the RM Device Programmer.

The **Port Range** field is preconfigured with common TCP ports that are typically open and available for communication. The following TCP ports and TCP port ranges are defined by default for the Job Server:

- 49202
- 49205-49210
- 51020-51030
- 65534

The user can use these default TCP ports or enter specific TCP ports opened on the Windows firewall. The **Apply** button is used to accept new TCP port values.

NOTICE: The **HTTPS (Port 443)** field is only visible for RM Servers running on the following operating systems:

- Window 8 and above
- Windows Server 2012 and above

HTTPS (Port 443) - HTTPS Protocol Support

NOTICE: The **HTTPS (Port 443)** field is only visible for RM Servers running on the following operating systems:

- Window 8 and above
- Windows Server 2012 and above

Enabling the **HTTPS (Port 443)** field allows the RM Windows services (RM Server or Job Server) to communicate using the HTTPS protocol. The user can selectively choose which RM Windows service should communicate using the HTTPS protocol. The HTTPS port 443 is typically open on the computer firewall and allows for easier configuring of an RM system. In the event that port 443 is unavailable on the Windows firewall, the user must manually configure the port.

NOTICE: For customers that do not want to transmit data over the HTTPS protocol, the **HTTPS (Port 443)** field must be disabled by the user. Once disabled, the RM system uses only the TCP protocol.

See HTTPS Protocol Support on page 159 for the feature description.

1.2.1.5.1
HTTPS Protocol Support

In addition to the TCP protocol, Radio Management supports the HTTPS protocol to allow RM clients (RM Configuration Client, RM Device Programmer and RM Job Processor) to communicate with the RM Windows services (RM Server and Job Server).

IMPORTANT: The HTTPS protocol is only supported when the Windows services of the RM Server and the RM clients are running on computers using Windows 8 and above or Window Server 2012 and above.

When the HTTPS protocol is enabled (default setting), the Windows service listens for requests on the HTTPS and TCP channels. When the HTTPS protocol is disabled, the Windows service listens for requests only on the TCP channel. The HTTPS protocol is set in the **Network Settings** window of the RM Server Utility.

See Configuring the HTTPS Protocol on page 160.

The RM client request is automatically routed to the appropriate channel based on the capabilities of the Windows service and the operating system running on the RM client computer. If the Windows

service is listening on the HTTPS and TCP channels and the RM client is running on Windows 8 and above or Window Server 2012 and above, the RM client request is routed to the HTTPS channel. Otherwise, the RM client request is routed to the TCP channel.

NOTICE:
RM clients are now required to connect to the RM Server on port **443** instead of port **8675**.

The following troubleshooting topics are related to the HTTPS protocol feature:

- Port Conflict by Multiple Applications on page 181
- Unable to Validate Server SSL Certificate on page 181

1.2.1.5.2
Configuring the HTTPS Protocol

The HTTPS protocol for RM Windows services (RM Server and Job Server) can be enabled or disabled for individual services using the RM Server Utility application deployed with the RM Server.

When and where to use: This procedure configures the HTTPS Protocol to allow RM clients to communicate with the RM Server over the Internet. See HTTPS Protocol Support on page 159.

Procedure:

1. Launch the RM Server Utility by selecting the Windows icon and searching for **RM Server Utility**.
2. Select **Network Settings** from the left column.
3. From the RM Server and/or Job Server sections, **check** or **uncheck** the **HTTPS (Port 443)** check box to enable or disable the HTTPS protocol.
4. Click **Apply**.

   A warning message appears stating that changes will not take effect until the service is restarted.
5. Press **OK**.
6. Restart the RM services. Perform the following actions:
   a. Select **Status** from the left column.
   b. From the Server Status section, click **Stop All**.
   c. Once the **Service Status** reads `Stopped`, click **Start All**.

1.2.1.6
Options

The **Options** selection is used to configure language, auto updates, and auto-add options.

Language Options

The **Language Options** section is used to set the display language for the RM Server utility.

Language
Defines the language to be selected from a drop-down list.

Apply Button
Sets the language defined in the language fields and restart the RM Server utility when checked.

Auto Updates

The **Auto Updates** section allows the system administrator to enable or disable AutoUpdate Enable for Radio Management on page 176.

Auto Add and Configure Devices in RM

The **Auto Add and Configure Devices in RM** section allows the system to automatically add radios to the RM Server when detected (USB connection or WiFi) by the RM Device Programmer but are not in the RM database. When a radio is auto added or read into the RM System, the radio is displayed in **Radio View**. The user can track the job in **Job View** as job type, Auto Add/Read Job.

NOTICE: Radios with a read password cannot use the Auto Add feature. If a radio is disconnected from the RM Device Programmer or the radio is out of range for WiFi connections, the radio is added to the RM Server and cannot be auto read again. The radio must be removed from the RM Server and reconnected.

The supported device types are as follows:

- LEX
- Si Devices
- APX
- MOTOTRBO

The following selections are supported:

Allow Auto Add Radios

When checked, the radio is automatically added to the RM Server database for the selected device type when detected by the RM Device Programmer. The user must select either the **Template Mode** or **Configuration Mode** radio button.

NOTICE: A read job for the radio must be manually created using the RM Client. To have the read job automatically created for the radio, select the **Auto Read Radios** option.

Template Mode

This radio button selection allows the radio to be added to the RM Server as a Template.

NOTICE: The Template is automatically generated and applied to the radio when the **Auto Read Radios** option is selected.

Configuration Mode

This radio button selection allows the radio to be added to the RM Server as a Configuration.

NOTICE: The Configuration is not automatically generated and applied to the radio. The user must first select **Auto Read Radios** and then select the **Generate Configuration** and **Apply to Radio** options.

Auto Read Radios

When checked, the detected radio is read and processed by the RM Job Processor. The Job Status column in Radio View displays the status.

Generate Configuration

A configuration is created from the data that is read from the radio when **Auto Read Radios** is selected.

NOTICE: Supported only for Configuration Mode.

Apply to Radio

When **Generate Configuration** is selected, the user has the option to assign the configuration to the radio. If not selected, the configuration is added to the RM server and can later be assigned to one or more radios.

NOTICE: Supported only for Configuration Mode.

Certificate Options

The **Certificate Options** section is used update RM Secure Sockets Layer (SSL) encryption to use secure hash algorithm 2 (SHA 2) for RM.

Options and Buttons	Description
SHA1 Certificates	Select this checkbox to use the SHA1 certificate in RM server.
SHA256 Certificates	Select this checkbox to use the SHA256 certificate in RM server.
Apply button	Click this button to apply the changes made to the type of certificate to use in RM server.
Remove SHA1 button	When the user selects the SHA1 Certificate checkbox, the user must click this button to remove the selected SHA1 certifiates. **NOTICE:** After removing the SHA1 certificate, the user cannot select the certificate. The user cannot reinstall the SHA1 certificate again.

1.2.1.6.1 Auto-Upgrading Older than 515.00.00 Version using SHA1 Setting

Procedure:

1. Install the latest version of RM Server and open the RM server utility.
2. Go to the **Options** Tab.
3. Select the **SHA1 Certificates** setting and click **Apply**.

   Monitor and make sure all the remote RMC, JP, DP have been auto-updated. After any RMC, JP or DP gets updated, it will not be able to connect to the server because the certificate setting is set to the newer, more secure SHA256 Certificates.
4. Open the RM server utility after all the remote RMC, JP, and DP have been updated.
5. Go to the **Options** Tab.
6. Select the **SHA256 Certificates** setting and click **Apply**.

1.3 RM Device Programmer and RM Device Monitor

RM Device Programmer

The RM Device Programmer is a Windows-based service that performs scheduled **Read** and **Write** jobs stored in the RM Server. Jobs are performed when the radio is connected to a RM Device Programmer either through a wired USB connection or using Over the Air Protocol (OTAP) and authenticated in the RM system. See Scheduler in Radio Management on page 128.

NOTICE:
Each RM Device Programmer in the RM system can program up to 16 radios simultaneously. If using a USB hub, ensure that it is a powered USB hub.

For 40 W MOTOTRBO repeaters and MTR radios, jobs are performed in sequential order if multiple devices are present.

RM Device Programmers can also be configured to program radios using Wi-Fi.

The RM Device Programmer is configured to process either **USB** and/or **Wireless (LAN)** or **Over The Air** jobs from the RM Device Monitor. Wired jobs require a RM Device Programmer configured for **USB**

and OTA jobs require a RM Device Programmers configured for **Over The Air**. See Configuring the RM Device Programmer on page 167.

Multiple Device Programmer

The user can setup multiple Device Programmers in a single Radio Management system by installing the Device Programmer on additional computers and configuring them to use a same RM Server. This allows customers to configure additional programming stations on multiple, remotely located computers.

It is recommended that only one Device Programmer have the IP Programming connection method enabled per repeater system. If it is desired to use multiple IP Programming enabled Device Programmers on the same repeater system then each Device Programmer should be assigned a unique group of repeaters to perform IP Programming jobs.

RM Device Monitor

The RM Device Monitor provides the user-interface to configure the RM Device Programmer and to view its current operations. The RM Device Monitor continuously monitors for the presence of radios that have scheduled jobs stored in the RM Server.

The RM Device Monitor is launched from Windows by selecting **Start→All Programs→Motorola→RM Device Programmer→RM Device Monitor**.

NOTICE: The file path to the RM Device Monitor may vary based on the Windows operating system. A search can also be performed in Windows for the **RM Device Monitor**. The RM Device Monitor does not need to run for the RM Device Programmer to process scheduled jobs.

The following operations are supported in the RM Device Monitor:

Execute Job button
The **Execute Job** button appears when the **Auto Process (only for USB+Wireless)** option under Settings is disabled. It indicates that the user must manually execute a scheduled job.

Job Details button
The **Job Details** button is used to show and hide detailed information related to the process performed by the RM Device Programmer.

Clear button
The **Clear** button is used to delete all the content displayed in the RM Device Monitor window.

Settings button
The **Settings** button opens the **Settings** window for configuring the RM Device Programmer. It allows the user to view or modify the RM Device Programmer to RM Server data communications, the RM Device Programmer to radio communications, as well as the Device Monitor language preference settings. See RM Device Programmer Settings on page 163.

1.3.1
RM Device Programmer Settings

The **RM Device Programmer Settings** window allows the user to configure RM Server data communications, communication method to radios, job settings, language settings, and additional features.

The **RM Device Programmer Settings** window is launch from the **Settings** button on the **RM Device Monitor**.

The RM Device Monitor is launched from Windows by selecting **Start→All Programs→Motorola→RM Device Programmer→RM Device Monitor**.

RM Server

Address

Defines the IP (Internet Protocol) Address part of the Address-Port combination that is used by the Device Programmer to communicate with the RM Server database. This address can be specified by either the IP (Internet Protocol) Address or the DNS (Domain Name System) host name. If the RM Server is deployed on the same computer as the RM Device Programmer, enter `localhost`.

Port

Defines the Port part of the IP (Internet Protocol) Address-Port combination that is used by the RMC to communicate with the RM Server's database. The default **Port** value of **443** is used for most deployments.

NOTICE: Previous releases of Radio Management used port 8675. Port 8675 is no longer supported as the default port for establishing a connection to the RM Server.

Authentication Method

Selects the cryptography (Authentication) method that the RM Server can accept from the current Device Programmer. In this case, the authentication method used is the same key for both encryption and decryption. The supported authentication methods are **Certificate**, **Windows Credentials**, or **One-Time Password**.

NOTICE: The One-Time Password authentication method is used for registering non-domain computer running the RM Device Programmer to communicate with the RM Server. See Registering a Non-Domain Computer using a One-Time Password on page 157.

Device Communication Method

Communication Method

USB

Configures the communication method for a wired USB connection between the RM Device Programmer and the radio or MUC (Multi-Unit Charger).

Wireless (LAN)

Configures the communication method for a wireless (Wi-Fi) computer network (secured access point) connection between the RM Device Programmer and radios. The higher bandwidth of a Wi-Fi connection allows for nearly simultaneous programming.

Over The Air

Configures the communication method for the LMR radio data channel to establish a connection between the RM Device Programmer and radios. OTAP communication occurs one radio at a time per RM Device Programmer. When selected, the **PN Server** section appears.

IMPORTANT:
Only one RM Device Programmer can be configured for Over the Air (OTAP) per RM system.

OTAP is not possible if there are any downloaded and pending Offline Jobs.

IP Program

Configures the communication method through TCP and Local UDP ports for direct IP network connection in a Capacity Max system. When selected, The **IP Program Settings** section appears.

IMPORTANT:
Only one RM Device Programmer can be configured for IP Program per Capacity Max system.

Radio Group

Assigned Radio Group

Selects an RM Client defined group or subgroup for the current RM Device Programmer. Selecting a specific group or subgroup creates a filter that only allows jobs for the selected group or subgroup. Selecting **All** eliminates any group filtering. See Radio Groups on page 135.

Job Settings

Auto Process Jobs (USB and Wireless (LAN))

When enabled (default), the RM Device Programmer processes all scheduled jobs without user interaction. When disabled, the user must manually start each job on a per radio basis using the Device Monitor. Each job is processed by selecting the **Execute Job** button.

Job Pacing

Defines a time delay between multiple jobs from 0-10 minutes.

NOTICE: Job Pacing is supported when the Communication Method is set to **Over The Air**.

IP Program Settings

This section allows the user to configure TCP ports and a Local UDP port for a Capacity Max system, as well as device IDs for Link Establishment and Capacity Max.

NOTICE:
The Minimum and Maximum TCP ports and Local UDP port should only be changed if there is a conflict with any non-Motorola Solutions software application. A unique Device ID should be used.

The following fields are supported:

- Minimum TCP Port
- Maximum TCP Port
- Local UDP Port
- Device Programmer ID
- Device Programmer Device ID

PN Server

This section allows the user to configure the Presence Notifier IP address and UDP port when programming radios Over The Air (OTAP).

Use PN Server

This checkbox should only be selected if the RM Device Programmer is used for Over The Air programming of radios.

PN Server

Enter the IP address of the active Trunking controller (default 172.21.0.1).

Port

Enter a UDP port number of 50015

Language Settings

Select Language

Specifies the language used by the RM Device Programmer and Device Monitor.

The supported languages are **English**, **German**, **Spanish (Latin)**, **Spanish (Spain) French (France)**, **Italian (Italy)**, **Polish (Poland) Portuguese (Brazil)**, **Russian (Russia)**, **Turkish (Turkey)**, and **Chinese (Simplified)**

NOTICE:
When a new language is selected, the Device Monitor must be restarted before the new language takes effect.

The input language depends on the keyboard selection made in the operating system of the computer, and not this language selection; however, numbers entered into a Device Monitor text field are always shown in the form 0-9, regardless of the language selection.

Offline Mode

Work Offline

Offline mode allows the user to select programming jobs from the RM Server to be downloaded to the Device Programmer (DP). Once downloaded, the computer containing the DP may be disconnected and "offline" when the programming of these jobs occurs; this is also known as local programming. The user can also use the offline programming with a DP that is permanently disconnected from the RM Server.

Offline Job Rules

- Local offline programming can only occur in a Distributive RM Deployment, which is when the Device Programmer (DP) is installed on a separate PC from the RM Server, Radio Management Clients (RMC), Job Processors.
- Downloading jobs scheduled for a future date is possible.
- Downloading Write jobs that include FLASHcode upgrades are not possible.
- Once a job is downloaded, canceling the job from the RMC is not recommended.
- The DP's Communication Method cannot be re-configured for **Over The Air** when there are downloaded and still pending jobs.
- If the Device Programmer (DP) is in offline mode, the DP can no longer connect to the RM server.

Temporary Offline Job Rules

- Programming jobs that qualify for local offline programming must be defined for a Job - Connection Method of either **USB** or **Any**.
- In the **Motorola Device Programmer Settings** window, the Communication Method must not be **Over The Air**.
- From the **Manage Offline Job - Online** window, click **Download** to select and download jobs that need to be programmed.
- You can move to another location without the RM Server with the PC containing the DP and plug in the radios that needs programming.
- The radio(s) are programmed and the programming results and data are stored in the DP.
- Reconnect to the RM Server and upload the programming results and data. Uncompleted jobs are left in the DP.

Permanent Offline Job Rules

- Programming jobs that qualify for local offline programming must be defined for a Job - Connection Method of either **USB** or **Any**.
- In the **Motorola Device Programmer Settings** window, the Communication Method must not be **Over The Air**.
- Download the job through an online DP from RM Server.
- Export the downloaded jobs to offline packages.

- Do not choose jobs that are actively being read or written.
- In the dialog, choose the location and name of the new offline packages and enter the password if prompted.
- Transfer and import the exported offline packages to one or more permanently offline DP.
- After one or more jobs are completed, you can export the jobs into the offline packages and then import the results into an online DP.
- Reconnect to the RM Server and upload the programming results and data. Uncompleted jobs are left in the DP.

1.3.2
Configuring the RM Device Programmer

The RM Device Programmer is configured from the RM Device Monitor.

NOTICE: The connection method used for a scheduled job in Scheduler must match the connection method configured for the RM Device Programmer.

Procedure:

1. From Windows, search for and select the **RM Device Monitor**.
2. From the **RM Device Monitor** window, select **Settings**.
3. From the **RM Server** section, ensure that the following fields are correct:
   a. In the **Address** field, enter the `IP address` or `hostname` (computer name) for the RM Server.

      NOTICE: If the RM Server is installed on the same computer as the RM Device Programmer, enter `localhost` as the **Address**.

   b. Ensure that the **Port** setting is set to the default value of `443`.
   c. Select the **Authentication Method** used by the RM Server and current RM Device Programmer.

      See Authentication Methods in RM Device Programmer Settings on page 163

   d. If required, enter a password in the **One-Time Password** field.

      NOTICE: The **One-Time Password** field is only accessible when the Authentication Method is set to **One-Time Password**.

   e. Click **Test Connection** to ensure that the RM Server settings are correct.
4. From the **Device Communication Method** section, select the **Communication Method** for the current RM Device Programmer.

   NOTICE:
   The connection method configured for a Scheduled Job in the RM Configuration Client must match the connection method configured for the RM Device Programmer.

   For **USB + Wireless (LAN)** Scheduled Jobs, the RM Device Programmer must be configured for either **USB** and/or **Wireless (LAN)**.

5 From the **Radio Group** section, select a group or subgroup from the **Assigned Radio Group** field for programming jobs with the current RM Device Programmer.

NOTICE: The radio selected for a scheduled job must be assigned to the group or subgroup selected in the **Assigned Radio Group** field. Otherwise, the **Job Status** column in theRadio View on page 131 table reads, `Running.WaitingForDP` and the Device Monitor reads, `No Jobs Pending`. Select **All** to ensure that all radios are accessible regardless of their assigned group or subgroup. See Radio Groups on page 135.

6 From the **Job Settings** section, ensure the **Auto Process Jobs (only for USB+Wireless)** is checked. Remove the check to manually execute a scheduled job.

7 Optional: In the **Job Pacing** field, add a time delay (0-10 minutes) between multiple jobs.

8 For **Over The Air** communication method, in the **PN Server** section, configure the following fields:

- **Use PN Server**
- **PN Server**
- **Port**

NOTICE:
See the **PN Server** section in RM Device Programmer Settings on page 163 for descriptions.

9 For **IP Program** communication method, in the **IP Program Settings** section, configure the following fields, if necessary:

- **Minimum TCP Port**
- **Maximum TCP Port**
- **Local UDP Port**
- **Device Programmer ID**
- **Device Programmer Device ID**

NOTICE:
The Minimum and Maximum TCP ports and Local UDP port should only be changed if there is a conflict with any non-Motorola Solutions software application. A unique Device ID should be used.

10 From the **Language Settings** section, select the language used by the RM Device Monitor.

See the **Language Settings** selection in RM Device Programmer Settings on page 163 for supported languages.

NOTICE:
When a new language is selected, the RM Device Programmer must be restarted before the new language takes effect.

The input language depends on the keyboard selection configured for the operating system of the computer, and not this language selection; however, numbers entered into text field are always shown in the form 0-9, regardless of the language selection.

11 Click **OK**.

1.4 RM Job Processor

The RM Job Processor (JP) is a Windows-based service that validates the data managed in the RM Server. RM Job Processors can exist on separate computers, all of which are connected to the same RM Server.

IMPORTANT: Motorola Solutions recommends deploying the RM Job Processor on the same computer as the RM Server. When using multiple RM Job Processors, it is recommended to colocate the JPs with the RM Server and connect them to the same physical subnet on the network.
Deploying too many RM Job Processors is not recommended because it may impact the performance of the system.

Deploying multiple RM Job Processors across a Wide Area Network (WAN) is not recommended due to the potential for network errors when transferring large amounts of data between the RM Job Processor and the RM Server.

Since the RM Job Processor is a service running on the computer, the RM Job Processor Configuration is used for configuring the connection settings. See Configuring the RM Job Processor on page 169.

The main functions of the RM Job Processor are as follows:

- To validate all codeplug / configuration data as it is created and organized in the Radio Management Configuration Client.
- To verify all codeplug information and configuration data in a scheduled **write** job as it is sent from the RM Server to the RM Device Programmer, and then to a radio.
- To verify all codeplug information and configuration data in a scheduled **read** job as it is retrieved from a radio, through the RM Device Programmer, and then sent back to the RM Server.

NOTICE: The validation of radio codeplug / configuration data can be very CPU intensive, it can be beneficial to isolate the Radio Management Configuration Client, the RM Device Programmer, and the RM Job Processor on separate computer within the same RM system network.

1.4.1 Configuring the RM Job Processor

The **RM Job Processor Settings** window allows the user to view or modify the RM Job Processor to RM Server data communications, as well as the RM Job Processor language preference settings. Whenever the RM Job Processor service is launched, it automatically attempts to connect to the RM Server's database using the configured RM Server and port settings.

Procedure:

1. From Windows, select **Start→All Programs→Motorola→RM Job Processor→RM Job Processor Config**
2. From the **RM Server** section, ensure that the following fields are correct:
   a. In the **Address** field, enter the `IP address` or `hostname` (computer name) for the RM Server.

      NOTICE: If the RM Server is installed on the same computer as the RM Job Processor, enter `localhost` as the **Address**.

   b. Ensure that the **Port** setting is set to the default value of `443`.

   c. Select the **Authentication Method** used by the RM Server and current RM Device Programmer.

- **Certificate** (default)
- **Windows Credentials**
- **One-Time Password**

d If required, enter a password in the **One-Time Password** field.

NOTICE: The **One-Time Password** field is only accessible when the Authentication Method is set to **One-Time Password**.

e Click **Test Connection** to ensure that the RM Server settings are correct.

3 From the **Job Settings** section, select the number of RM Job Processors that are configured for the same RM Server.

NOTICE: When multiple RM Job Processors are deployed in an RM system, each installed on a separate computer, the JPs process the jobs as they become available.

4 From the **Language Settings** section, select the language used by the RM Job Processor.

The supported languages are **English**, **German**, **Spanish (Latin)**, **Spanish (Spain) French (France)**, **Italian (Italy)**, **Polish (Poland) Portuguese (Brazil)**, **Russian (Russia)**, **Turkish (Turkey)**, and **Chinese (Simplified)**

NOTICE:
When a new language is selected, the RM Job Processor must be restarted before the new language takes effect.

The input language depends on the keyboard selection configured for the operating system of the computer, and not this language selection; however, numbers entered into text field are always shown in the form 0-9, regardless of the language selection.

5 Click **OK**.

1.5 MOTOTRBO RM SQL Server Licensing

Radio Management (RM) is built on top of SQL Server Express 2014. The features provided in SQL Server Express are more than adequate for most customers.

Customers managing a large fleet of radios or thousands of configurations should upgrade to SQL Server Standard. Refer to the *RM Deployment Guide* for criteria on when an SQL Server Standard license is required.

This section covers SQL Server licensing models, recommends a SQL Licensing model for RM, suggest RM deployments when licensing SQL Server Standard, and details how to upgrade the SQL Server Express deployment to SQL Server Standard.

NOTICE: The licensing models covered in this document are based on product descriptions found on Microsoft's SQL website: https://www.microsoft.com/en-us/sql-server/. Refer to Microsoft documentation for information on the latest licensing models.

1.5.1 SQL Server Licensing Models

Before upgrading the SQL Server edition it's important to understand the difference in the licensing models.

The decision to upgrade from SQL Server Express to SQL Server Standard has been made. The next step is to decide what SQL Server Standard license to purchase.

NOTICE: When purchasing SQL Server licenses from Microsoft, the license is for the current version of SQL Server. A license for a newer version can be used to obtain a license for an older version. Although RM is built on SQL Server 2014, a license purchased for SQL Server 2016 can be used to obtain a license for SQL Server 2014 Standard.

Microsoft provides two types of licensing models for SQL Server:

- Server and Client Access Model on page 171
- Core-Based Model on page 171

1.5.1.1
Server and Client Access Model

The Server and Client Access License (CAL) is a commercial software license that allow clients to connect to server software and use their services.

Microsoft's documentation states that under the Server + CAL licensing model, each operating system environment (OSE) running SQL Server software or any of its components must have a SQL Server software license assigned to the physical server hosting the OSE. Each server license allows customers to run any number of SQL Server instances in a single OSE, either physical or virtual. Essentially, any physical or virtual OSE running SQL Server needs a license for the SQL Server application.

In addition to the SQL Server software license, each user or device accessing the RM Server must have a SQL Server CAL for SQL Server. There are two types of CAL licenses:

User
Licenses a person accessing or using the services or functionality of SQL Server or any of its components. The Server + User CAL should only be considered if a few users are accessing the RM Client and RM Device Programmer (DP). Essentially, any person who uses an RM Client or plugs a device into an RM Device Programmer requires a User CAL.

Device
Licenses a device accessing or using the services or functionality of SQL Server or any of its components. A device in this case, is a computer hosting one or more RM components. If multiple users access RM Clients or Device Programmers from the same computer, it makes more sense to purchase a device CAL for each computer that has an RM component installed.

NOTICE: Every remote RM Device Programmer performing jobs that do not require human interaction (Wi-Fi, OTAP, or IP Programming) requires a device CAL.

1.5.1.2
Core-Based Model

Core-based licensing requires customers to purchase licenses for all the cores in the system for a physical server.

Under the Core-based licensing model, there are two methods available:

Physical OSE
SQL Server is running directly on a physical hardware system and is all or part of an operating system environment instance.

Virtual OSE
SQL Server is running on a virtual operating system environment.

NOTICE: For either type of Core-Based licensing, an unlimited number of users and devices can access the data housed in SQL Server.

Physical OSE

Each physical core within each physical processor on the server machine requires an SQL Server core license. Core licenses are sold in packs of two. The number of core licenses required is the total number of physical cores divided by two.

For example, if you have purchased a server machine that has one physical processor with 8 physical cores, you need to purchase 4 core license packs.

- 1 (processors) x 8 (cores) = 8 cores
- 8 cores / 2 cores per core license = 4 core license packs

Virtual OSE

Each virtual core in the virtual OSE that is running instances of SQL Server must have a core license. To license individual virtual machines using the Core model, customers must purchase a core license for each of the following:

- Virtual core
- Virtual processor
- Virtual CPU
- Virtual thread allocated to the virtual machine

This is subject to a four core minimum per virtual machine.

1.5.2 SQL License Model and RM Deployment Recommendations

The recommendations covered in this section allows users to understand the selection of SQL Server licenses based on RM deployments.

1.5.2.1 SQL License Model Recommendations

The selection of an SQL license model depends on how computers are accessed within an RM system.

The total number of users and devices using RM can be dynamic. If a strict number of users is accessing RM Clients or connecting radios into RM Device Programmers, the **Server + User CAL** model is recommended. If many users are accessing a strict number of computers running installed RM components, then the **Server + Device CAL** model is recommended.

If many users are accessing a large deployment of computers in an RM system, the **Core-Based** licensing model is recommended. If the physical operating system environment (OSE) is only using the SQL Server for the RM Server, deploying the RM Server on a physical OSE, hosting many physical cores, can be costly and unnecessary. As core-based licensing requires a minimum of 4 core licenses per physical processor, it is recommended that the RM Server be deployed on a physical or virtual machine that has a total of 4 physical/virtual cores and 1 physical processor.

1.5.2.2 RM Deployment Licensing Example

The selection of an SQL Server license depends on the deployment type for the RM system.

The *RM Deployment Guide* recommends the following deployment of computers for a fleet of 10,000 radios:

- 1 RM Server and SQL Server computer with 4 cores

- 1 RM Job Processor computer with 16 cores
- 6 RM Client computers
- 6 RM Device Programmer computers

Server + CAL License

If only 6 users are accessing the 6 RM Clients and 6 RM Device Programmers, then the following licenses are purchased:

- 1 **SQL Server** license
- 6 **User CAL** licenses
- 1 **Device CAL** for the RM Job Processor computer

NOTICE: Each RM Device Programmer performing OTAP, Wi-Fi, or IP Programming jobs needs a device CAL.

If many users are accessing the same 6 physical/virtual RM Client computers and/or the 6 physical RM Device Programmer computers, with no plans for adding more RM Client or RM Device Programmer computers, then the following licenses are purchased:

- 1 **SQL Server** license
- 14 **Device CAL** licenses, as follows:
  - 6 RM Client computers
  - 6 RM Device Programmer computers
  - 1 RM Job Processor computer
  - 1 RM Server and SQL Server computer

Core-Based License

If many devices are hosting RM components and many users are interacting with those components, purchase 4 **Core-Based** licenses.

1.5.3 Upgrading the SQL Server Edition

The SQL Server Installation Center supports an edition upgrade for the SQL Server.

When and where to use:
Microsoft provides detailed steps on how to upgrade an edition of SQL Server. This section provides a basic summary of the information found in Microsoft's documentation to Upgrade to a Different Edition of SQL Server (Setup).

Procedure:

1. Insert the SQL Server installation media.
2. From the root folder, double-click **setup.exe**.
3. From the **SQL Server Installation Center** window, click **Maintenance**, and then select **Edition Upgrade**.

   NOTICE: If Setup support files are required, SQL Server Setup installs them. If instructed to restart the computer, restart before continuing.

4 Select **Enter the product key**, enter the product key, and then click **Next**.

NOTICE: If the product key is for a newer version of SQL Server other than for SQL Server 2014, contact your vendor or Microsoft to obtain an SQL Server 2014 product key.

5 Read the license agreement, check **I accept the license terms**, and click **Next**.

6 On the **Select Instance** window, select the **MOTORMSVR2** instance and click **Next**.

The **Ready to Upgrade Edition** window shows a tree view of installation options that were specified during Setup.

7 To continue, click **Upgrade**.

During the edition upgrade process, the services must be restarted to initiate the new setting. After the edition upgrade, the **Complete** window provides a link to the summary log file for the edition upgrade.

8 Click **Close**.

1.6 Sets and Configurations in RM Client

The Radio Management Configuration Client uses configurations and sets to organize radio identity and radio properties in a data structure that is assigned to radios as well as other RM system devices.

The following sections describe the concepts and editing of Sets, Configurations, and MVO (model, version, options) within Radio Management:

1.6.1 What are Sets and Configuration?

Radio Management (RM) 2.0 introduces the concept of Sets and Configurations for programming and organizing radio fields.

Sets

A **Set** is a logical group of related radio fields. For example, the General Settings Set contains fields that are not specific to a given radio feature, but generally apply to a radio. The RM Configuration Client is used to access and program radio fields within Sets.

Configurations

A **Configuration** is a collection of **Sets**. There are different types of Configurations, which are associated with radio models, versions and options.

The following are common use cases:

- When a radio is read into RM 2.0, the user can select whether to create a Configuration and apply it to the radio for the same product family.
- The Product Family for the Configuration is displayed in **Configuration View**.
- Configurations can be shared across radios, as long as the radios are within the same product family.
- Some radios have features that other radios in the same product family do not support. For example, there are radios with and without a front panel display within the same product family.
  - The user can assign (share) a Configuration between radios that may or may not have a front panel display. Radio Management ignores the configuration properties for the non-display radio when it writes to the radio. There are many radio properties that can be shared this way.

- Some radio features cannot be shared among radio models. Changing a feature within a Configuration for one type of radio might make the other radios that share the configuration invalid.
  - The Analyze Results feature in Radio Management identifies invalid features or fields before a Write job is created.
- Some Sets within a Configuration are single instance, meaning that only one Set of that type can be assigned to a Configuration. For example, General Settings.
- Other Sets are multi-instance, meaning that a number of Sets of that type can be assigned to a Configuration. For example, MDC Systems.

1.6.2
Model, Version, and Options

When a radio is read or imported into Radio Management (RM), information about the model, version, and options for that radio are stored in the RM Server. This data is referred to as MVO (model, version, options).

- When a new radio is added to RM without reading or importing the radio, the MVO of the radio is unknown. A Configuration cannot be assigned to the radio, nor can a Write job be scheduled for the radio.
- The user can assign an MVO to a new radio by selecting and right-clicking a radio in Radio View, then selecting “Select MVO”. A list of all radios that have MVO are presented. The user can select one of the radios to assign the same MVO to the selected radio.

  NOTICE: If the user choose product family as **CMSS** ot **MNIS** in the **Select MVO** view, the Version is always the latest and non-editable.

  - Once a radio has an MVO, a Configuration can be assigned to the radio and a Write job can be scheduled.
  - A radio without an assigned Configuration or MVO can be read into Radio Management.

1.6.3
Copy and Paste Operation

This feature allows the user to copy the editable data from one configuration (source) and paste the data on another configuration (destination). The exchange of data between two configurations is performed at a Set level.

When the user performs the Copy operation on a set within the Set Categories navigation pane, the allowable fields are copied to Windows clipboard.

For example, a set is copied and contains fields A, B, C, and D. For security reasons, field D is not allowed to be copied. Therefore, the data copied to the clipboard are fields A, B, and C only.

The paste operation on the **Set Categories** navigation pane copies the data from the clipboard to the editable fields in the destination set.

The **Warning Messages** tab displays any field that did not copy with the failure status/reason.

NOTICE: Multi-select Copy/Paste is only supported when the user selects multiple sets of the same type and only pasting the data on the parent node of the same set type.

NOTICE: Shared sets do not support copy and paste operation because these sets can share directly.

Named Sets and References

The data for sets that have a name or alias is matched using the user-defined name. For example, the user chooses to copy a trunking personality that points to the trunking system named “3d4 EID”, the

value of the field are selected based on the available trunking systems in the consume configuration. If the destination configuration does not contain the “3d4 EID” trunking system set, then the field pointing to "3d4EID" is set to **NULL** and is marked as invalid.

If the user pastes a set that has the same name a set in the destination configuration, RM overwrites the existing set with the source Set. Single instance sets are always overwritten with the copied data.

1.6.4
Edit Configurations with and without Context

There are two methods for editing Configurations in Radio Management Configuration Client:

1 A radio is selected from **Radio View** and the user selects **Edit Configuration**.

- The Configuration is within **context** of the selected radio and changes to the Sets within the Configuration are validated against the known fields of the radio.
- A Configuration that is edited within **context** displays the **Device Information** node with serial number under **Set Categories** in the navigation pane.

2 A Configuration is edited by selecting **Actions→Manage→Configurations**.

- The Configuration is without context of a radio and changes made to the Configuration may make it invalid for radios using the Configuration.

NOTICE: This is an advanced method and should only be performed by advanced users.

1.6.5
Shared Sets

A selected number of Sets related to the Capacity Max feature can be shared between Configurations. The sharing of Sets between Configurations is an easy way to avoid repeating the same Set information over and over for each Configuration.

WARNING: Set editing without context is an advanced feature and should only be performed by someone that understands the system. It is possible to invalidate all radios that use a Configuration that references a shared Set.

NOTICE:

- Set sharing is limited to Capacity Max Features and Voice Announcements.
- A shared Set can be edited within or without the context of a Radio by using **Edit Configuration** or by selecting **Actions→Manage→Configurations**.
- A shared Set can also be edited by selecting **Actions→Manage→Sets**.

Example:

Suppose that Configuration A contains Zones, Channels, and Contacts that are defined for one system and another Configuration B that has different Zones, Channels, and Contacts defined for its system. Instead of defining a separate Capacity Max System for each Configuration, the system can share a Capacity Max System Set between the Configuration A and B.

1.7
AutoUpdate Enable for Radio Management

The **AutoUpdate Enable** feature in Radio Management (RM) ensures that all RM components connected to the RM Server are running compatible software versions. This feature is enabled or disabled in the The RM Server Utility on page 145, under Options on page 160.

Selecting the **AutoUpdate Enable** check box during the installation of the Radio Management suite, sets the default value in the RM Server Utility to **Enable Auto Updates**.

IMPORTANT: In order for RM components to communicate with the RM Server, the RM components must be running a software version that is compatible with the RM Server.

The following RM components are installed with the **AutoUpdate Enable** feature:

- Radio Management Configuration Client
- RM Device Programmer
- RM Job Processor

When the RM component connects to the RM Server, the **AutoUpdate Enable** feature compares the software version installed on the RM component to the software version installed on the RM Server. If an incompatible software version is detected on the RM component, the latest software version is downloaded and installed as follows:

RM Component	Installation Process
RM Configuration Client	Initiated by the user
RM Device Programmer	Automatic
RM Job Processor	Automatic

AutoUpdate Preconditions

The AutoUpdate process is performed when the following conditions are met:

- The **AutoUpdate Enable** option is enabled in the RM Server Utility.
- The software version of the RM Server is greater than the software version of the RM component.

See the AutoUpdate Process Initialization on page 177 section for RM components initialization processes.

1.7.1
AutoUpdate Process Initialization

The AutoUpdate feature is initiated differently for the Radio Management Configuration Client (RMC) than it is for the RM Device Programmer and the RM Job Processor.

The RM components are initialized as follows:

1.7.1.1
Radio Management Configuration Client with AutoUpdate

The **AutoUpdate Enable** feature requires user interaction with the RMC client. When the RMC client attempts to connect to the RM Server with an incompatible version, and the preconditions are met, the user is notified and presented with the option to update.

If the user acknowledges the update, a file is downloaded from the RM Server to the client and installed. The RMC client application shuts down and a progress bar displays the installation progress.

Once the RMC client is updated to the current version, the user must re-launch the RMC client to connect to the RM Server.

NOTICE: If the **AutoUpdate Enable** feature is disabled in the RM Server Utility, the user is notified and must contact the system administrator to enable the feature before the RM Client can be updated. See Options on page 160.

1.7.1.2
RM Device Programmer with AutoUpdate

The **AutoUpdate** process automatically starts when the RM Device Programmer attempts to connect to the RM Server with an incompatible version. The RM Device Programmer downloads the updated file from the RM Server and runs the file. The installation runs in the background with no user interaction or notification.

NOTICE: When connecting to a different RM Server with a newer version from the RM Device Programmer Settings on page 163 window, the user must click **OK** for the update to occur and be successful. Clicking **OK** restarts the services.

The user can use the **RM Device Monitor** to check the version compatibility for the RM Device Programmer. See Checking Version Compatibility for the RM Device Programmer on page 178.

1.7.1.2.1
Checking Version Compatibility for the RM Device Programmer

When and where to use: Use this procedure to determine if the current software version on the RM Device Programmer is compatible with the RM Server.

Procedure:

1. Perform a search in Windows for **Device Monitor**.
2. Right-click on **RM Device Monitor** and select **Run as administrator**.
3. From the RM Device Monitor, click **Settings**.
4. Ensure that all RM Server settings are correct.
5. Click **Test Connection**.

   The **Test Connection Result** dialog box opens indicating if the connection was successful.

1.7.1.3
RM Job Processor with AutoUpdate

The **AutoUpdate** process automatically starts when the RM Job Processor attempts to connect to the RM Server with an incompatible version. The RM Job Processor downloads the updated file from the RM Server and runs the file. The installation runs in the background with no user interaction or notification.

NOTICE: When connecting to a different RM Server with a newer version from the **RM Job Processor Settings** window, the user must click **OK** for the update to occur and be successful. Clicking **OK** restarts the services.

The user can use the **RM Job Processor Config** to check the version compatibility for the RM Job Processor. See Checking Version Compatibility for the RM Job Processor on page 178.

1.7.1.3.1
Checking Version Compatibility for the RM Job Processor

When and where to use: Use this procedure to determine if the current software version on the RM Job Processor is compatible with the RM Server.

Procedure:

1. Perform a search in Windows for **Job Processor**.
2. Right-click on **RM Job Processor Config** and select **Run as administrator**.
3. Ensure that all RM Server settings are correct.

4 Click **Test Connection**.

The **Test Connection Result** dialog box opens indicating if the connection was successful.

1.8 Troubleshooting in Radio Management

This section covers various troubleshooting related topics in Radio Management that are intended to provide information and resolution.

WARNING: Only a user with a good understanding of the system should perform these troubleshooting activities.

The following sections contain helpful troubleshooting information:

1.8.1 Radio Management Connection Problems

The Radio Management Configuration Client and the RM Device Programmer may experience issues connecting to the RM Server in a distributed environment.

These issues may be caused by a number of factors and the error messages that are displayed do not always provide the necessary information to resolve the issue.

The following sections provide the user with helpful information to resolve common problems.

1.8.1.1 RM Client Component and RM Server Computers in Different Domains

Problem:

The RM client component (RMC, RM Device Programmer, or RM Job Processor) cannot connect to the RM Server. This can occur even if the RM client component is using the correct RM Server hostname or IP address within its connection settings.

When properly configured, the DNS on the network generally handles hostname resolution without any issue. However, there are cases (especially in non-domain deployment scenarios), where the RM Server hostname is not resolved by the computer running the RM client component.

Resolution:

Perform the following procedures to connect the RM client component to the RM Server:

1 Obtain and record the **IPv4 Address** and **hostname** of the computer running the RM Server. See Obtaining the IP Address and Hostname for the RM Server on page 179.

2 Modify the Windows hosts file `C:\Windows\System32\drivers\etc\hosts` on the RM client to resolve the DNS name of the computer running the RM server. See Resolving DNS Names for RM Server on page 180.

1.8.1.1.1 Obtaining the IP Address and Hostname for the RM Server

Procedure:

1 From the RM Server computer, run **Command Prompt** as an administrator.

2 Enter the command, `ipconfig`.

3 Record the **IPv4 Address** for the RM Server computer.

4 At the command prompt, enter the command, `hostname`.

5 Record the **hostname** for the RM Server computer.

1.8.1.1.2
Resolving DNS Names for RM Server

An RM client computer residing in a different domain then the RM Server requires that the DNS name for the server be resolved on the client computer.

Procedure:

1 From the client computer running the RM client component, navigate to `C:\Windows\System32\drivers\etc\`.

2 Open the **hosts** file, as an administrator, using a text editor (Notepad).

3 Add an entry to the end of the file using the following syntax:

<IPAddress> <hostname>
where, ***<IPAddress>*** is the RM Server IPv4 Address and ***<hostname>*** is the hostname of the RM Server record in Obtaining the IP Address and Hostname for the RM Server on page 179.

Step example: `111.222.333.444 MyRMServerName`

4 Save the **hosts** file.

5 Start the RM client component (RMC, Device Programmer, or Job Processor) and verify the connection to the RM Server.

NOTICE:
If the server is on a different domain than the client, a non-domain user account must be set up in the RM Server Utility for each user running the RM Configuration Client.

1.8.1.2
Network Connectivity Problem

Intranet or Internet

An internal company intranet connection to the RM Server is required.

The RM Configuration Client requires an internet connection for the licensing feature.

1.8.1.3
Windows Firewall and RM Ports

Problem:

Communication between the Radio Management (RM) Clients and the RM Server requires open HTTPS and TCP ports. The RM Client cannot connect with the RM Server due to a Windows firewall error. The current firewall settings are blocking required RM Server ports.

Resolution:

Configure the valid range of RM Server ports as inbound rules in the firewall application. A valid range of RM Server ports can be found in the RM Server Utility.

1.8.1.4

Port Conflict by Multiple Applications

Port conflicts can occur when the RM Server is deployed on a computer running other services concurrently.

Problem:

The RM Windows services do not start. An error is logged in the service log file indicating that the service port is in use by another application.

Resolution:

Review the service log, identify the application using the port and stop the application. Launch the RM Server Utility and **Start All** the services.

1.8.1.5

Unable to Validate Server SSL Certificate

The RM Client (RM Configuration Client, RM Device Programmer and RM Job Processor) must establish a trust relationship for the SSL Certificate used by the RM Windows services.

NOTICE: This error can occur when using the HTTPS Protocol feature that uses port 443 to connect to the RM Server.

Problem:

The RM client is unable to start and an error is reported in the client log file. The error indicating that a trust relationship could not be established for the SSL/TLS secure channel. This error can occur when the default port 443 has been registered with another application on the client machine.

Resolution:

Install the Trusted Root Certification Authority of the SSL certificate on the client machine. Contact Motorola Solutions Service Center for assistance.

1.8.1.6

Coordinated Time for Distributed Radio Management Deployment

Any computer running Radio Management components (RM Client, RM Device Programmer, or RM Job Processor) must have its time set to within five minutes of the time on the computer running the RM Server.

- This synchronization of time ensures that the Radio Management components connect to the RM Server.
- Computers may exist in different time zones; however, their time must be set to within 5 minutes of the RM Server's time, accounting for the difference in time zones. For example, an RM Server in Chicago is set to 1:15 p.m. (CST). Ensure that the computers running the DP and JP in California are set to 11:15 a.m. (PST).
- Ensure that the daylight saving time setting is set the same for all RM computers.

1.8.1.7
Radio Management Windows Services

Problem:

Communication with any of the RM components has failed. One or more of the Motorola RM services may have stopped running.

Resolution:

Verify that the following Motorola RM Windows services are running on the server.

- Motorola RM Discovery Service
- Motorola RM Server
- Motorola RM Job Server
- Motorola RM Job Processor
- Motorola RM Device Programmer

If any of the above mention services is not running, open Windows services on the server, stop all the Motorola RM services, and restart them in the order listed above.

NOTICE: If the Motorola RM services do not start, there is a problem with the installation and no further action can be performed. Contact Motorola Solutions Service Center for assistance.

1.8.1.8
Certificates and License Server

Digital Certificates

Radio Management uses digital certificates to authenticate the RM Device Programmer. Occasionally, the certificates can become corrupted, or they can expire.

Contact customer support to have the digital certificates manually reinstalled.

Connection Problems with the License Server

If the server is in a separate network than the client, it may be necessary to create a route to the server in the client's Windows Route Table. Refer to Windows documentation to perform this task.

The URL to the license server is https://licensing.motorolasolutions.com

1.8.1.9
Radio Management Errors after Installation

The Radio Management (RM) server or RM Server Utility can encounter unexpected errors. The error messages show that files or assemblies are not updated or are missing. Parts of the RM system may appear to be working, while other parts may not.

Problem

Windows updates that are started or in progress when the RM suite installation is started can interfere with the installation of RM components.

Resolution

Motorola Solutions recommends checking Windows Update to ensure that no installations are pending or in progress before installing the RM suite.

1.8.2

Delete Button is Grayed Out

There are many reasons why a delete button is grayed out. The following sections describe some of the more common reasons.

Views Displaying Grayed Out Delete Button

In **Radio View**, the delete button can be grayed out when the selected radio has a scheduled job that is waiting to be completed.

In **Configuration View**, the delete button can be grayed out when the selected Configuration is assigned (referenced) to a radio.

NOTICE: Configuration View is displayed when a radio is selected from **Radio View** and the user clicks **Edit Configuration**.

In **Set View**, the delete button can be grayed out when a selected Set is referenced in a Configuration.

NOTICE: The **Set View** is displayed when the user selects **Actions→Manage→Sets** and selects a Set within the programming pane.

Showing Referenced Elements

The user can identify the referenced relationship between Sets and Configuration by performing one of the following actions:

1. When editing a Configuration in **Configuration View**, select a Set within the Configuration, right-click, and select either **Show Related Sets** or **Show Related Configurations**.
2. When editing a Set in **Set View**, select a Set within the programming pane, right-click, and select either **Show Related Sets** or **Show Related Configurations**.

To remove the reference, edit the Configuration and delete the Set from the Configuration.

1.8.3

Antivirus Software Blocks CPS/RM Installation

Antivirus software can block the installation of the CPS/RM application.

If detected, many antivirus programs prevent application/executable files from running a malicious application. The antivirus program can be configured to allow the application/executable to run on the computer. The steps required to exclude a specific application from being blocked varies on the antivirus program.

Problem

When trying to unzip the CPS/RM software, and/or run the **setup.exe** to install CPS/RM, the antivirus software blocks the installation program and prevents the software from installing or running on the computer. An example message would be, `Antivirus software is blocking an 'unknown' program from running since it believes it to be a malicious actor.`

Resolution

Add the **setup.exe** file to the exclusion/exception list of the antivirus program running on the computer.

NOTICE: Consult the documentation for the antivirus software installed on the computer on how to add an application/executable to the exceptions/exclusions list.

1.8.4
Radio Resets Twice after a Write Job

The radio resets twice after a firmware and configuration job is written.

Problem:

After performing a firmware and configuration write job using the **USB+Wireless(LAN)** connection method, the radio is resetting twice.

Resolution:

When upgrading the radio firmware and modifying the configuration, it is highly recommended to perform two separate write jobs. First, upgrade the radio firmware and schedule a write job. When the firmware upgrade write job is complete, register the new feature, configure the radio settings for the new feature, and then schedule a second write job.

1.8.5
Prevent USB LAN as the Default LAN for USB Connection

If the user selects direct cable (USB) instead of wireless (Wi-Fi) connection as the interface between the RM tool and the device, the device will work as a modem (USB tethering).

Problem:

USB tethering prevents the PC from connecting to the internet because Windows uses the USB LAN as a default LAN. When there are no valid internet connection, it may cause errors during license registration or license recovery.

NOTICE: This issue may also occur if the wireless driver utility is configured to disable Wi-Fi until all wired network connections are disconnected. Ensure that all wired network connections are disabled, so that the wireless connection stays active even when a wired link is present.

Resolution:

Motorola Solutions recommends setting an interface metric value greater than any network connections to the main network. See Changing the Operating System Network Priority Table.

1.8.6
Codeplug Version Support

MOTOTRBO Customer Programming Software (CPS) 2.0 can perform the operations on the listed radio types for the specified codeplug versions.
If the user cannot perform an operation due to the codeplug version of the device, upgrade the device in MOTOTRBO Customer Programming Software (CPS) 1.0 to a codeplug version that is supported according to the following table.

Radio Type	Open Archive	Open CPS 1.0 Archive	Read	Write	Clone/ Clone Express	License Activation	Update	Recover
MOTOTRBO mobile/ portable	13.02.00 (R2.4) or greater.						Not supported.	

Radio Type	Open Archive	Open CPS 1.0 Archive	Read	Write	Clone/ Clone Express	License Activation	Update	Recover
MOTOTRBO repeater	14.00.00 (R2.4) or greater.							
MOTOTRBO 2.0 mobile/portable	07.07.00 (R2.4) or greater.						• From: 03.00.11 (R2.1) or greater. • To: 07.07.00 (R2.4) or greater.	
MOTOTRBO 2.0 repeater	01.00.00 (R2.4) or greater							
MOTOTRBO 2.0.5 mobile	07.07.00 (R2.4) or greater							
MOTOTRBO SL	07.07.00 (R2.4) or greater.						• From: 04.00.09 (R2.2) or greater. • To: 07.07.00 (R2.4) or greater.	
MOTOTRBO Light	07.07.00 (R2.4) or greater.							

Chapter 2

Radio Management Common Tasks

Radio Management (RM) supports a wide range of tasks that can be performed by users and administrators of an RM System. Common tasks allows users to quickly obtain the information that is required to perform the task.

The following common tasks are supported:

2.1 Convert Radios from Template Mode

The conversion of radios to configuration mode is a feature for users who are already managing radios in template mode.

See Converting Radios from Template Mode on page 123.

The RM Server database can store radio data in either template mode or configuration mode. In order to view and edit data for a device using the RM Configuration Client, it must be converted to a configuration. This is supported by the Convert Template to Configuration feature in Radio Management. See Convert Template to Configuration on page 123.

NOTICE: Radios can only be converted if their data exists as templates in the RM Server database. Once radio data is converted to a configuration, it can no longer exist as a template in the RM server database. Also, radios with ongoing scheduled jobs cannot be converted. All changes made to the radio since the last write job is discarded after the conversion.

The conversion of a large fleet of radios from template mode requires planning ahead. Decide when the conversion will take place, decide on logical steps, and whether all radios should be converted at once or gradually. Consider converting batches of radios that share the same configuration. This ensures that radios are set up correctly.

IMPORTANT: Since radio data is stored differently in the RM Server database between template mode and configuration mode, expect the conversion process to take a significant amount of time. Allow for up to 1 hour to migrate 500 radios. During the conversion, the RM system is unavailable and the user cannot program or change anything.

2.1.1
Converting Radios from Template Mode

This feature allows the user to convert radios from Template mode to Configuration mode in Radio View.

NOTICE:
The RM Server stores radio data as Templates or Configurations in the database. In order to view and edit the data for a device in the RM Configuration Client, it must be converted to a Configuration. Once radio data is converted from a Template to a Configuration, it can no longer exists as a Template in the RM Server database.

Radio Groups are shared between Template and Configuration modes. If a radio is assigned to a Group in Template mode, it is placed into the same Group in Configuration mode after the conversion.

Procedure:

1 From the **Actions** menu, select **Advanced→Convert Radio from Template Mode**.

The **Convert Radio from Template Mode** window opens and displays a list of all radios stored in the RM Server as templates.

2 Select one or more radios from the list by checking the box for the relevant radio.

WARNING:

1 Once a radio is converted to a Configuration, it is no longer available as a Template.

2 Radios with ongoing scheduled jobs cannot be converted.

3 All changes made to the radio since the last write will be discarded after the conversion.

3 Click **OK**.

4 To view the progress of the operation, click the **Task** tab at the bottom.

Once the task is completed, the radio appears in the **Radio View** list as a Configuration and no longer appears in the RM Server database as a Template.

2.2
Convert Template to Configuration

The **Convert Template to Configuration** feature is only accessible in Configuration View and allows the user to convert Templates from RM Server database to Configurations.

See Converting a Template to a Configuration on page 124.

The **Convert Template to Configuration** window is launched from the **Actions** menu by selecting **Advanced→ Convert Template to Configuration**.

The user can **Add** and **Edit** Configurations and the Sets assigned to each Configuration. The **Delete** icon allows the user to remove configurations from the RM Server database that are not assigned to a device.

2.2.1
Converting a Template to a Configuration

This feature allows the user to convert radios from Template mode to Configuration mode in Configuration View.

NOTICE:
The RM Server stores radio data as Templates or Configurations in the database. In order to view and edit the data for a device in the RM Configuration Client, it must be converted to a Configuration. Once radio data is converted from a Template to a Configuration, it can no longer exists as a Template in the RM Server database.

Radio Groups are shared between Template and Configuration modes. If a radio is assigned to a Group in Template mode, it is placed into the same Group in Configuration mode after the conversion.

Procedure:

1 From the **Actions** menu, select **Advanced→Convert Template to Configuration**.

The **Convert Template to Configuration** window opens and displays a list of all Templates stored in the RM Server.

2 Select one or more Templates from the list by checking the box for the relevant Template.

WARNING:

1 Once a radio is converted to a Configuration, it is no longer available as a Template.

2 Radios with ongoing scheduled jobs cannot be converted.

3 All changes made to the radio since the last write will be discarded after the conversion.

3 Click **OK**.

4 To view the progress of the operation, click the **Task** tab at the bottom.

Once the task is completed, the Configuration appears in the **Configuration View** list.

2.3
Connect Plus Option Board Programming in RM

Radio Management (RM) supports the writing of packages to MOTOTRBO 2.0 radios, provisioned for Connect Plus.

Package files can contain the option board (OB) firmware/bootloader, OB codeplug/frequency file, or a combination of both.

The user can import, delete, and select packages in the RM Client. When importing, the user can import multiple packages. See Writing the Option Board Package on page 188.

The two scenarios where importing package fails are as follows:

- If the imported package has the same name as a package already imported into the RM Server.
- If the package is not properly formatted. The failure reason will be reported in the Job View.

2.3.1
Writing the Option Board Package

The user can write the option board package by importing packages and scheduling a write job over USB or Wi-Fi.

Prerequisites:

The user must obtain the option board packages created for each radio using the Connect Plus Customer Programming Software (CPCPS).

The relevant radios have been read into the RM Server database and are being managed in RM.

NOTICE:
For USB only MOTOTRBO 2.0 radio models, a write job can be scheduled for radios using firmware versions greater than 2.7.0.

For Wi-Fi enabled MOTOTRBO 2.0 radio models, a write job can be scheduled over USB or WiFi for radios using firmware versions greater than 2.6.5.

Both radio model types must be provisioned with Connect Plus and be on a Connect Plus channel.

Procedure:

1. Go to **Actions→Manage→Packages**.
2. Click the more button and select **Import**.
3. Browse and select all the packages generated by the CPCPS and click **Open**.

   All imported packages are now displayed in the **Resource View→Packages** table.
4. Switch to **Radio View** and select a radio for package assignment.

   NOTICE: Radios are selected in **Radio View** by clicking on the arrow in the first column.
5. Right-click the selected radio and select **Packages**.
6. From the Package dialog window, select the file that matches the serial number of the radio within the **Name** column.

   NOTICE:
   Perform this step for each radio that is to have a package assigned.

   Alternatively, the user can import the .csv file created by CPCPS that contains assignments of packages to radios.

   The **Packages Modified** flag changes color under the **Modified** column and the selected package name is reflected in the **Package** column. The user can perform other RM operations such as upgrade firmware, modify radio codeplug, and activate radio features.
7. Select all radios and schedule a write job for a **USB + Wireless (LAN)** connection type.

   See Scheduling Jobs in Radio Management on page 130.

   RM writes the package contents and any other radio modifications to each radio.

2.4

Adding Users to the RM System

Access to the RM Server requires users to be added to the RM system under the **User Authorization** section of the RM Server Utility.

NOTICE:
Users of the local RM Server computer and domain users must be added when the **Allow all Windows Authenticated users** is unchecked. All non-domain users must be added regardless of the **Allow all Windows Authenticated users** check box setting.

When and where to use: The RM Server Utility is colocated with the RM Server. Perform a search in Windows for **RM Server Utility** and launch the application.

Procedure:

1 From the **RM Server Utility**, select **User Authorization**.

2 Ensure that **View by** is set to **Users**.

3 Click the **Add** icon to add users. Perform the following actions:

NOTICE:
The selections available from the **Add** icon depend on whether the RM system is connected to a domain or a local network.

If…	Then…
If adding a domain user,	perform the following actions: **a** Select **Add Users from Domain**. **b** From the **Select Users** window, click **Advanced**. **c** From the **Common Queries** section, enter the name of a user as identified in the domain. **d** Click **Find Now**. **e** From the **Search results** section, select one or more users from the list. **f** Press **OK**. The user now appears in the list of users in the **User Authorization** window.
If adding a non-domain user,	perform the following actions: **a** Select **Add Non Domain User**. **b** From the **New User** window, enter the users credentials as they appear in the window. The following fields are required: • **Username** • **Password** (seven characters minimum) • **Confirm New Password** **NOTICE:** The **Show Password** check box can be used to view the password text for verification purposes.

If…	Then…
	• All other fields are optional. **c** Press **OK**. The user now appears in the list of users in the **User Authorization** window.
If adding a local computer user,	perform the following actions: Use this procedure to add specific users from the local computer. **a** Select **Add Users from Local Computer**. **b** From the **Select Users** window, click **Advanced**. **c** From the **Common Queries** section, click **Find Now**. **d** From the **Search results** section, select one or more users from the list. **e** Press **OK**. **f** From the **Select Users** window, click **OK**. The user now appears in the list of users in the **User Authorization** window.

Postrequisites: Once a new user is added to the RM system, assign a role to the user to provide the required permissions. See Updating Authorized Users and Assigning Roles on page 152.

2.5 Adding Computers to the RM System

The RM administrator can authorize domain and non-domain computers to run the RM Device Programmer and/or RM Job Processor Windows services within an RM system.

When and where to use: The RM Server Utility is colocated with the RM Server. Perform a search in Windows for **RM Server Utility** and launch the application.

Procedure:

1. From the **RM Server Utility**, select **Machine Authorization**.
2. Check **Enable computer authorization**.
3. Click the **Add** icon and perform one of the following actions:

NOTICE:
The selections available from the **Add** icon depend on whether the RM system is connected to a domain or a local network.

If…	Then…
If adding a domain computer,	perform the following actions: **a** Select **Add Computers from Domain**. **b** From the Select Computer window, click **Advanced**. **c** From the **Common Queries** section, enter the name of a computer as identified in the domain. **d** Click **Find Now**.

If…	Then…
	e From the **Search results** section, select one or more computers from the list. **f** Press **OK**. **g** From the **Select Computer** window, click **OK**. The computer now appears in the list in the **User Authorization** window. **h** Select one or both of the RM system Windows services (**Device Programmer**, **Job Processor**).
If adding a non-domain computer,	perform the following actions: **a** Select **Add Non Domain Computer**. **b** From the **Off-domain machine registration** window, enter the machine credentials as they appear in the window. • Host Name • Password • Confirm Password **IMPORTANT:** This password must then be entered into the **One-Time Password** field of the RM Component (Job Processor or Device Programmer) configuration in order to register the computer running the component. See Registering a Non-Domain Computer using a One-Time Password on page 157. **NOTICE:** The **Show Password** check box can be used to view the password text for verification purposes. **c** Press **OK**. The computer now appears in the list in the **User Authorization** window. **d** Select one or both of the RM system Windows services (**Device Programmer**, **Job Processor**).

2.6
Adding Radios to Radio Management

Radios are added to Radio Management through the **New Radio** window in **Radio View**. See New Radio Window on page 79.

Prerequisites: Acquire the serial numbers for all radios being added to Radio Management.

When and where to use: Use this procedure to add new radios that are not archived or exists in the RM Server.

Procedure:

1 From **Radio View** , click the **Actions** menu and select **New Radios**.

2 From the **New Radio** window, enter the **Serial Number** for the radio.

3 Optional: If necessary, enter the following optional radio values:

- **Radio ID**
- **CAI** (Common Air Interface network ID)
- **Radio Alias**
- **Radio IP**
- **Region**
- **Read/Write Password**

NOTICE: SeeNew Radio Window Fields on page 80 for descriptions. All optional fields can be edited in **Radio View** once the radio is read into the database of the RM Server.

4 Click **OK**.

A new record (row) for the radio is added to **Radio View**.

5 Schedule a read job to import all radio-specific and system values. Perform the following actions:

NOTICE: The following procedure is an example. For additional settings in the **Schedule Job** window, see Scheduler in Radio Management on page 128.

a Select the **radio** from the list of radios.

b Click the **Scheduler** button to open the **Schedule Job** window.

c From **Job Type**, select **Read**.

d Click the **Generate configuration** box to transfer radio data into a configuration.

e In the **Job Name** field, enter a relevant name for the read job.

f To schedule the job to run once the radio is connected, click **OK**.

The **Job Status** column for the radio reads, `Running.WaitingForDP`. Once the radio is connected to the RM system and the serial number is authenticated, the RM Device Programmer (DP) initiates the job. Once the read job is successful, the **Job Status** column reads, `Completed`.

2.7 Importing Configurations

This feature allows the user to import configuration files from the **Configuration View**.

Procedure:

1 From the **Actions** menu, select **Manage→Configurations** to open the **Configuration View** window.

2 Select **Actions→Import→Configurations**.

NOTICE: The **Import Configurations** window can also be launched by clicking on the **Import** button.

3 From the **Import Configurations** window, select the relevant **.dbn** files.

4 Click **Open**. The **Import Configuration** dialog box appears.

5 Type in a relevant name in the **Suffix for Sets** field.

6 Click **OK**.

2.8

Importing Radios to Radio Management

This feature allows the user to add radios to the RM Server database from archived codeplug files.

NOTICE: Radios can only be imported in **Radio View**.

Procedure:

1. From **Radio View**, select **Actions→Import→Radio**.

   NOTICE: The **Import Radio** window can also be opened by pressing CTRL+I or by clicking on the **Import** operational button above the table in the programming pane.

2. From the **Import Radios** window, browse to the storage location that contains the codeplug archive files and perform one of the following:
   - For older codeplug archives, select **Single Unit File (*ctb)** from the file type drop-down list.
   - For codeplug files exported from Radio Management, select **Codeplug Byte Array (*xpba)** from the file type drop-down list.

   NOTICE: By default, the **Codeplug Byte Array (*.xpba)** is the selected file type.

3. Select the relevant archive file or files.

   NOTICE: Use the CTRL key (selective) or the SHIFT key (range) to select multiple files.

4. Click **Open**.

   The **Import Radios** dialog box opens.

5. From the **Import Radios** dialog box, select **Create radios**.
6. Optional: Select **Create configurations** to import the radio data into a Configuration and Set structure.

   NOTICE: Select **Apply configurations to radios** to assign the created configuration to the radio.

7. To override the existing radio, click **Always override**. Otherwise, select **Never Override**.
8. Optional: In the **Password** field, enter the password assigned to the radio codeplug.

   NOTICE:
   The characters appear as asterisk (*) while being entered. To verify the password that is being entered, click the small **eye** icon in the **Password** field.

   When importing multiple radios, an **Advanced** button appears. Selecting **Advanced** allows the user to enter a password for each radio.

9. Click **Import**.

   The radio is added to the RM Server database and listed in the table in **Radio View**.

NOTICE:

- When a codeplug file is imported and its serial number already exists in the RM Server database, the previous configuration for that radio is overwritten when the **Always override** option is selected.

- A archive history of radios based on scheduled read/write jobs is always maintained in the database, unless a radio is deleted from the RM Server's database.
- By default, the codeplug filename is used as the Configuration name in **Radio View**. The Configuration name can be renamed from **Configuration View**.

2.9 Creating and Managing Radio Groups

Radio groups and subgroups are created and managed within the **Group** navigation pane. Once radio groups and subgroups are created, they can be renamed, deleted, or moved within the tree view structure.

Prerequisites: Radios must first be imported or read into the Radio Management (RM) Server before they can be assigned to a group or subgroup.

Procedure:

1 Click the **Radio View** icon to display the Radio view table.

2 Create, manage, or move a group or subgroup. Perform one of the following actions:

If…	Then…
If creating a group,	perform the following actions: **a** Right-click in the navigation pane and select **New Group**. **b** Enter a `name` for the new group.
If creating a subgroup,	perform the following actions: **a** Right-click the relevant group or subgroup and select **New Group**. **b** Enter a `name` for the new subgroup.
If deleting a group or subgroup,	perform the following actions: **a** Select the relevant group or subgroup. **b** Right-click and select **Delete**. **NOTICE:** A confirmation window opens and warns the user that the selected group and all subgroups will be deleted. Any radios assigned to the group or sub-group will no longer be assigned to a group.
If renaming a group or subgroup,	perform the following actions: **a** Select the relevant group or subgroup. **b** Right-click and select **Rename**. **c** Enter a new `name` for the group or subgroup.
If moving a group or subgroup,	perform the following actions: **a** Select the relevant group or subgroup.

If…	Then…
	b Using standard drag and drop functionality, move the group or subgroup to its new location. **NOTICE:** Groups or subgroups can be moved and placed over an existing group or between groups. Any radios assigned to the group or subgroup move with the group or subgroup to the new location.

3 Assign radios to a group or subgroup. Perform one of the following actions:

If…	Then…
If assigning a single radio,	perform the following actions: **a** From the navigation pane, select **All** to display all radios in the RM system. **b** From the table, select the **Group** column drop-down list for a radio, expand the nodes if necessary, and select the relevant group or subgroup. **c** Repeat the previous step until all radios for the group or subgroup are assigned.
If assigning multiple radios,	perform the following actions: **a** From the navigation pane, select **All** to display all radios in the RM system. **b** Select all the relevant radios in the table using standard SHIFT and CRTL key functionality. **c** Right-click any highlighted row and select **Select Group**. **d** From the **Select Group** window, expand the nodes if necessary, and select the relevant group or subgroup. **e** Click **OK**.

NOTICE:
A radio can only be assigned to one group or subgroup.

If **None** is the only value in the **Group** drop-down list, then no radio groups exist in the navigation pane.

Once all radios are assigned to a group or subgroup, selecting the group from the navigation pane displays only those radios belonging to the group or subgroup in the table.

2.10
Comparing Configurations in Configuration View

The comparing of configurations allows the user to validate field values within a relevant configuration before scheduling a job.

When and where to use: This procedure compares all fields within the configurations and displays all fields that have different values.

NOTICE: When comparing configurations in **Configuration View**, certain radio specific fields are not available.

Procedure:

1. From **Radio View**, select **Actions→Manage→Configurations**
2. Select the first configuration (source) to compare.
3. Hold down the CTRL key on the keyboard and select the second configuration (target) to compare.
4. Right-click over any of the selected configurations and select **Compare Configuration**.
5. Click the **Compare Results** tab to expand the **Compare Results** informational window.

   The differences between the source configuration and target configuration are displayed.

   NOTICE: Filter the differences by using the View by: **All**, **Different**, **Missing**, or **MVO** options.
   To navigate to the field, click a linkable value.

2.11
Comparing Configurations in Radio View

The comparing of configurations allows the user to validate field values within a relevant configuration before scheduling a job.

When and where to use: This procedure compares all fields within the configurations and displays all fields that have different values.

Procedure:

1. From **Radio View**, select the first radio (source) to compare.
2. Hold down the CTRL key on the keyboard and select the second radio (target) to compare.
3. Right-click over any of the selected radios and select **Compare→Assigned Configuration...** to compare partial codeplug fields.

   Select **Last Programmed...** to compare full codeplug fields.
4. Click the **Compare Results** tab to expand the **Compare Results** informational window.

   The differences between the source configuration and target configuration are displayed.

   NOTICE: Filter the differences by using the View by: **All**, **Different**, **Missing**, or **MVO** radio buttons.
   To navigate to the field, click a linkable value.

2.12
Exporting Configuration

This feature allows the user to export one or more configurations from the **Configuration View**.

Procedure:

1. From the **Actions** menu, select **Manage→Configurations**.
2. To export a single configuration, perform the following actions:
   a. Select the relevant row.
   b. Right-click the selected row and select **Export Configuration**.
   c. From the **Export Configuration** window, browse and select a folder.
   d. Enter a name for the configuration file.
   e. Click **Save**.
3. To export multiple configurations, perform the following actions:
   a. Select the first row.
   b. Press and hold the **CTRL** key.

      NOTICE: To select consecutive rows, press and hold the **SHIFT** key.

   c. Select one or more additional rows.
   d. Right-click the selected rows and select **Export Configuration**.
   e. Browse and select a folder location.

      NOTICE: Since the selected configuration files will be saved to the selected folder location, it is recommended to create a new folder to help organize the exported files.

   f. Click **OK**.

2.13 Exporting Radio

This feature allows the user to export a radio from **Radio View**.

Prerequisites: These selections are only available when accessed from the **Radio View**.

Procedure:

1. Select one or more radios from the table.
2. From the **Radio View**, select **Actions→Export→Radio** to open the **Export Radio** window.
   Alternatively, enter `Ctrl+Shift+R`.
3. From the **Export Radio** window, browse and select a file location.
4. Enter a name for the Codeplug Byte Array (**.xpba**) file.
5. Click **Save**. The **Export Radios** dialog box appears.
   The radio is exported successfully.
6. Click **OK**.

2.14 Scheduling Jobs in Radio Management

The scheduling of jobs is performed within the **Schedule Job** window of **Radio View**.

Jobs can be scheduled to occur immediately or within a specific window of time.

NOTICE: The RM Device Programmer processes scheduled jobs when the presence of the radio is detected.

CAUTION:
When upgrading the radio firmware and modifying the configuration, using the **USB + Wireless (LAN)** connection method, it is highly recommended to perform two separate write jobs. Performing these tasks in a single write job causes the radio to reset twice.

First, upgrade the radio firmware by scheduling a write job. When the firmware write job is complete, register the new feature, configure the radio settings for the new feature, and then schedule a second write job.

IMPORTANT:
The user must perform a schedule read before performing a schedule write for new configuration to take effect.

Procedure:

1. From **Radio View**, select the relevant radio or radios.
2. Select the **Scheduler** menu.

   NOTICE: The **Schedule Job** window can also be opened by right-clicking on the selected radios and selecting **Schedule Job** from the pop-up menu or by selecting the **Schedule job** shortcut above the search field.
3. From the **Job Type** section, perform one of the following actions:
   - Select **Write** to schedule a write job for one or more radios.
   - Select **Switchover** to schedule a switchover job.
   - Select **Read** to schedule a read job.
   - Select **Generate configuration** to create a configuration from radio data.
   - Select **Apply to radio** to assign the configuration to the radio.
4. Select the preferred **Connection Method**.

   The following connection methods are supported:
   - **USB + Wireless (LAN)**
   - **IP Program**
   - **Over the Air**
   - **Any**

   See Scheduler in Radio Management on page 128 for connection method descriptions.

   NOTICE:
   When **Write** is the selected Job Type, and the Connection Method is **Over the Air** , specific OTAP rules are enforced.

   Language Packs can only be sent Over The Air in combination with firmware. If the firmware does not need to be updated, a USB connection is required.

   The connection method configured for a Scheduled Job must match the connection method configured for the RM Device Programmer. See RM Device Programmer Settings on page 163.
5. Optional: To **Suppress ARS after Switchover**, enable the check box.
6. Optional: If **Suppress ARS after Switchover** is enabled, define the **Switchover Timer**.
7. In the **Job Name** field, enter a relevant name for the job.

8 In the **Time Zone** field, select the relevant time zone from the drop-down list.

9 In the **Start after** fields, select the start date (in day-month-year format) and start time (in a 24-hour format).

NOTICE: Clicking in the date field, enables a drop-down arrow that allows the user to select the date from a calendar. The time can be manually entered or selected, in one minute increments, using the up and down arrows.

10 In the **End after** fields, select the end date (in day-month-year format) and end time (in a 24-hour format).

11 Click **OK**.

2.15 Configuring the HTTPS Protocol

The HTTPS protocol for RM Windows services (RM Server and Job Server) can be enabled or disabled for individual services using the RM Server Utility application deployed with the RM Server.

When and where to use: This procedure configures the HTTPS Protocol to allow RM clients to communicate with the RM Server over the Internet. See HTTPS Protocol Support on page 159.

Procedure:

1 Launch the RM Server Utility by selecting the Windows icon and searching for **RM Server Utility**.

2 Select **Network Settings** from the left column.

3 From the RM Server and/or Job Server sections, **check** or **uncheck** the **HTTPS (Port 443)** check box to enable or disable the HTTPS protocol.

4 Click **Apply**.

A warning message appears stating that changes will not take effect until the service is restarted.

5 Press **OK**.

6 Restart the RM services. Perform the following actions:

a Select **Status** from the left column.

b From the Server Status section, click **Stop All**.

c Once the **Service Status** reads `Stopped`, click **Start All**.

2.16 Configuring the RM Device Programmer

The RM Device Programmer is configured from the RM Device Monitor.

NOTICE: The connection method used for a scheduled job in Scheduler must match the connection method configured for the RM Device Programmer.

Procedure:

1 From Windows, search for and select the **RM Device Monitor**.

2 From the **RM Device Monitor** window, select **Settings**.

3 From the **RM Server** section, ensure that the following fields are correct:

a In the **Address** field, enter the `IP address` or `hostname` (computer name) for the RM Server.

NOTICE: If the RM Server is installed on the same computer as the RM Device Programmer, enter `localhost` as the **Address**.

b Ensure that the **Port** setting is set to the default value of `443`.

c Select the **Authentication Method** used by the RM Server and current RM Device Programmer.

See Authentication Methods in RM Device Programmer Settings on page 163

d If required, enter a password in the **One-Time Password** field.

NOTICE: The **One-Time Password** field is only accessible when the Authentication Method is set to **One-Time Password**.

e Click **Test Connection** to ensure that the RM Server settings are correct.

4 From the **Device Communication Method** section, select the **Communication Method** for the current RM Device Programmer.

NOTICE:
The connection method configured for a Scheduled Job in the RM Configuration Client must match the connection method configured for the RM Device Programmer.

For **USB + Wireless (LAN)** Scheduled Jobs, the RM Device Programmer must be configured for either **USB** and/or **Wireless (LAN)**.

5 From the **Radio Group** section, select a group or subgroup from the **Assigned Radio Group** field for programming jobs with the current RM Device Programmer.

NOTICE: The radio selected for a scheduled job must be assigned to the group or subgroup selected in the **Assigned Radio Group** field. Otherwise, the **Job Status** column in theRadio View on page 131 table reads, `Running.WaitingForDP` and the Device Monitor reads, `No Jobs Pending`. Select **All** to ensure that all radios are accessible regardless of their assigned group or subgroup. See Radio Groups on page 135.

6 From the **Job Settings** section, ensure the **Auto Process Jobs (only for USB+Wireless)** is checked. Remove the check to manually execute a scheduled job.

7 Optional: In the **Job Pacing** field, add a time delay (0-10 minutes) between multiple jobs.

8 For **Over The Air** communication method, in the **PN Server** section, configure the following fields:

- **Use PN Server**
- **PN Server**
- **Port**

NOTICE:
See the **PN Server** section in RM Device Programmer Settings on page 163 for descriptions.

9 For **IP Program** communication method, in the **IP Program Settings** section, configure the following fields, if necessary:

- **Minimum TCP Port**
- **Maximum TCP Port**
- **Local UDP Port**
- **Device Programmer ID**

- **Device Programmer Device ID**

NOTICE:
The Minimum and Maximum TCP ports and Local UDP port should only be changed if there is a conflict with any non-Motorola Solutions software application. A unique Device ID should be used.

10 From the **Language Settings** section, select the language used by the RM Device Monitor.

See the **Language Settings** selection in RM Device Programmer Settings on page 163 for supported languages.

NOTICE:
When a new language is selected, the RM Device Programmer must be restarted before the new language takes effect.

The input language depends on the keyboard selection configured for the operating system of the computer, and not this language selection; however, numbers entered into text field are always shown in the form 0-9, regardless of the language selection.

11 Click **OK**.

2.17 Configuring the RM Job Processor

The **RM Job Processor Settings** window allows the user to view or modify the RM Job Processor to RM Server data communications, as well as the RM Job Processor language preference settings. Whenever the RM Job Processor service is launched, it automatically attempts to connect to the RM Server's database using the configured RM Server and port settings.

Procedure:

1 From Windows, select **Start→All Programs→Motorola→RM Job Processor→RM Job Processor Config**

2 From the **RM Server** section, ensure that the following fields are correct:

a In the **Address** field, enter the `IP address` or `hostname` (computer name) for the RM Server.

NOTICE: If the RM Server is installed on the same computer as the RM Job Processor, enter `localhost` as the **Address**.

b Ensure that the **Port** setting is set to the default value of `443`.

c Select the **Authentication Method** used by the RM Server and current RM Device Programmer.

- **Certificate** (default)
- **Windows Credentials**
- **One-Time Password**

d If required, enter a password in the **One-Time Password** field.

NOTICE: The **One-Time Password** field is only accessible when the Authentication Method is set to **One-Time Password**.

e Click **Test Connection** to ensure that the RM Server settings are correct.

3 From the **Job Settings** section, select the number of RM Job Processors that are configured for the same RM Server.

NOTICE: When multiple RM Job Processors are deployed in an RM system, each installed on a separate computer, the JPs process the jobs as they become available.

4 From the **Language Settings** section, select the language used by the RM Job Processor.

The supported languages are **English**, **German**, **Spanish (Latin)**, **Spanish (Spain) French (France)**, **Italian (Italy)**, **Polish (Poland) Portuguese (Brazil)**, **Russian (Russia)**, **Turkish (Turkey)**, and **Chinese (Simplified)**

NOTICE:
When a new language is selected, the RM Job Processor must be restarted before the new language takes effect.

The input language depends on the keyboard selection configured for the operating system of the computer, and not this language selection; however, numbers entered into text field are always shown in the form 0-9, regardless of the language selection.

5 Click **OK**.

Chapter 3

Radio Management Sets for MOTOTRBO™

The Radio Management Client groups radio parameters into Sets. A Set is a collection of radio parameters that define a specific radio feature (For example, General Settings or Network). For MOTOTRBO, Sets are preselected and grouped into a Configuration for a specific product family, such as MOTOTRBO Subscribers. The Sets that are preselected for Configurations cannot be shared between other Configurations. For this reason, the configuration and modification of parameters within a preselected Set must be performed within the relevant Configuration.

NOTICE: For a Capacity Max system, Sets can be shared among Configurations. The configuration and modification of Sets for a Capacity Max system is performed in the **Set View** of the Radio Management Client (**Actions→Manage→Sets**).

The following Sets are supported for MOTOTRBO:

3.1 Set Name

The **Set Name** field allows you to enter a name that uniquely identifies the set within a list of similar sets. An error message is displayed when trying to save an already in use user-specified Set Name.

3.2 Last Modified Date

This read-only field displays the date and time for when the Set was last saved.

3.3 Comments

This field allows you to enter a comment for the Set that is currently being configured. The comment appears in the initial list of Sets for a given Set Category.

3.4 Device Information

This section displays unique device specific information that is stored in the Radio Management (RM) server .

The following fields are supported:

3.4.1 Model Number

This read-only field displays a string of alphanumeric characters to represent the radio type.

Examples of model types include MOTOTRBO Non-Display Portable, MOTOTRBO Display Mobile with GNSS, and MOTOTRBO Repeater.

This paragraph is applicable to MOTOTRBO Conventional radios. By default, when creating an IP Site Connect system, the Model Number is blank and would always be blank unless it is programmed to be updated to reflect the programmed repeater's model number.

3.4.2
Tanapa Number

This field displays a string of alphanumeric characters that is used for factory or distribution center tracking and regional labeling.

3.4.3
Region

This field displays the codeplug region. CPS 2.0 can program radios from all regions.

3.4.4
Serial Number

This read-only field displays a string of unique alphanumeric characters to identify the radio.

This feature is applicable to MOTOTRBO Conventional radios.

By default when creating a Link Establishment system, the Serial Number is blank and would always be blank unless it is programmed to be updated to reflect the programmed model number for the repeater.

3.4.5
Physical Serial Number

This read-only field displays a string of unique alphanumeric characters to identify the radio.

3.4.6
Firmware ID

The field displays an ID that uniquely identifies the radio firmware. Firmware ID can be used to differentiate firmware for the same or different products.

3.4.7
Frequency Range (MHz)

This field displays the radio's frequency range.

The range is defined as being between, or equal to, the minimum and maximum frequencies, at which the radio is allowed to operate.

3.4.8
Power Range (W)

This read-only field displays the power range in watts of the radio.

3.4.9
Power Range (W)

This read-only field displays the power range in watts for the 800 MHz and 900 MHz band of the radio.

NOTICE:
This feature is applicable for MOTOTRBO Conventional Mobile and Repeater 800/900 MHz and 3600 Trunking capable Mobile only.

3.4.10
12V Power Range (W)

This read-only field displays the 12V power range in watts of the radio.

3.4.11
24V Power Range (W)

This read-only field displays the 24V power range in watts of the radio.

3.4.12
Firmware Type

Displays the firmware type programmed in the radio.

The available firmware types are Analog and Digital.

- Analog: Analog only firmware
- Digital: Analog and digital firmware

3.4.13
Firmware Type

Displays the firmware type programmed in the radio.

The available firmware types are Analog and Digital.

- Analog: Analog only firmware
- Digital: Analog and digital firmware

3.4.14
Firmware Version

This field displays the firmware version programmed in the radio.

Firmware is the software that controls the internal hardware components of the radio.

3.4.15
Codeplug Version

This field displays the codeplug version programmed in the radio.

Codeplug is the information (data) that supports the firmware and hardware configuration.

3.4.16
Bootloader Version

This field displays the bootloader version programmed in the radio.

The bootloader is the software component used to upgrade the firmware and codeplug of the radio.

3.4.17
Netmask

Typical network configuration parameters include the subnet mask (netmask) in addition to the IP address.

Subnetting an IP network allows a single large network to be broken down into several logical smaller ones by allocating bits from the host portion as the network portion. The subnet mask tells how many bits identify the subnetwork, and how many bits provide room for the host addresses. The Netmask value is not editable.

NOTICE:
For MOTOTRBO Conventional radios, this feature value is fixed at 255.255.255.0 irregardless of the Radio IP address configuration.

For 3600 Trunking capable radios, this feature is calculated based on the Radio IP address configuration: For Class A (IP Address Range: 0.0.0.0 to 127.255.255.255) NetMask used is 255.0.0.0; For Class B (IP Address Range: 128.0.0.0 to 191.255.255.255) NetMask used is 255.255.0.0; For Class C (IP Address Range: 192.0.0.0 to 223.255.255.255) NetMask used is 255.255.255.0.

3.4.18
Last Programmed Date and Time

The field displays the last date and time at which the radio was programmed.

3.4.19
MAC Address

Displays the MAC address or physical address for the repeater and the MOTOTRBO SLR Series repeater.

This address serves as a unique device identifier.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.4.20
Wi-Fi MAC Address

Displays the Wi-Fi MAC address or physical address for the repeater and the MOTOTRBO SLR Series repeater.

This address serves as a unique device identifier.

NOTICE:
If a unique WiFi MAC address is not encountered during a Read job (for example, FF-FF-FF-FF-FF-FF, 00-00-00-00-00-00), enable the WiFi feature on the radio and repeat the Read job. When successful, a unique WiFi MAC address (for example, 4C-CC-34-22-38-C6) is displayed.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.4.21
Controller FPGA Version

Displays the version of the Field Programmable Gate Array (FPGA) software image that is built in the controller board of a MTR3000 base radio/repeater.

3.4.22
Wireline FPGA Version

Displays the version of the Field Programmable Gate Array (FPGA) software image that is built in the wireline card for a MTR3000 base radio/repeater with the Wireline board installed.

3.4.23
RX Frequency Range (MHz)

Displays the RX frequency range for the radio.

The range is defined as being between, or equal to, the minimum and maximum frequencies, at which the radio is allowed to operate.

3.4.24
RX Frequency Range (MHz)

Displays the 800 MHz band and 900 MHz band RX frequency range for the MOTOTRBO Conventional Repeater.

The range is defined as being between, or equal to, the minimum and maximum frequencies, at which the radio is allowed to operate.

3.4.25
RX Frequency Range (MHz) (SL Series 800/900 MHz Radios)

Displays the RX frequency range for the radio.

The range is defined as being between, or equal to, the minimum and maximum frequencies, at which the radio is allowed to operate.

NOTICE:
This feature is applicable for MOTOTRBO 2.0 SL Series 800/900 MHz radios.

3.4.26
TX Frequency Range (MHz)

Displays the TX frequency range for the radio.

The range is defined as being between, or equal to, the minimum and maximum frequencies, at which the radio is allowed to operate.

NOTICE:
This feature is disabled when the Voting Mode feature is set to Analog Satellite Receiver or Digital Satellite Receiver. This feature is still disabled even though the user sets Voting Mode to Normal Repeater or Digital Voting Repeater until the user reads a device with Voting Mode set to those values.

3.4.27
TX Frequency Range (MHz)

Displays the 800 MHz band and 900 MHz band TX frequency range for the MOTOTRBO Conventional Repeater.

The range is defined as being between, or equal to, the minimum and maximum frequencies, at which the radio is allowed to operate.

NOTICE: This feature is disabled when the Voting Mode feature is set to **Analog Satellite Receiver** or **Digital Satellite Receiver**. This feature remains disabled until the user sets Voting Mode to **Normal Repeater** or **Digital Voting Repeater** and reads a device.

3.4.28
TX Frequency Range (MHz) (SL Series 800/900 MHz radios)

Displays the TX frequency range for the radio.

The range is defined as being between, or equal to, the minimum and maximum frequencies, at which the radio is allowed to operate.

NOTICE:
This feature is disabled when the Voting Mode feature is set to Analog Satellite Receiver or Digital Satellite Receiver. This feature is still disabled even though the user sets Voting Mode to Normal Repeater or Digital Voting Repeater until the user reads a device with Voting Mode set to those values.

This feature is applicable to MOTOTRBO 2.0 SL Series 800/900 MHz radios.

3.4.29
Warranty Date

This field displays the warranty date of the portable, mobile, or repeater.

A user can upgrade firmware using a package that has a lower release date or equals to the package release date. If the warranty date exceeds, capture the SMA license prior to performing the firmware upgrade.

3.5
Welcome Bitmap Set

The **Welcome Bitmap** set is used to load an image that appears on the radio display when the radio is turned on.

The following section contains all supported fields:

3.5.1
General (Welcome Bitmap)

The **General** section of the Welcome Bitmap set contains the following fields:

3.5.1.1
Welcome Image

Allows the user to load an image (bitmap) that is used as a Welcome screen for the radio.

The **Select** button is used to select a bitmap image, while the **Remove** button is used to remove the current image from the radio display.

The resolution and color depth for the image are as follows:

- 160 pixel (width) * 72 pixel (height) and 256 color for Mobile
- 132 pixel (width) * 90 pixel (height) and 256 color for Portable Full Keypad model
- 132 pixel (width) * 72 pixel (height) and monochrome color for Portable Limited Keypad model
- 132 pixel (width) * 90 pixel (height) for Handheld Control Head (HCH) mode

- 320 pixel (width) * 240 pixel (height) and 16-bit (R5-G6-B5) color for SL Series radios

NOTICE:
When the Welcome image is used, the Radio Name text is not displayed during the power up sequence.

If the mobile radio is in HCH mode, the user cannot customize the Welcome Bitmap for HCH. Therefore, the default Welcome image is used on the welcome screen regardless of the bitmap image selection.

3.6 Language Packs Set

The **Language Packs** set is used to create a list of language pack sets that are used to assign to radios. The user can add multiple sets of language packs by using the Language Pack List table.

The following fields are supported:

3.6.1 Language

Displays the language selected from a list of Language Packs.

Languages are added by selecting the **Add** icon. Once languages are selected from the **Add Language Packs** window, they are added to the list of languages packs and removed from the **Add Language Packs** window.

NOTICE: Languages in the **Add Language Packs** window are listed in their native language.

3.6.2 Locale

Displays the 4 character language code (i.e., en-us) for the selected language pack.

3.7 General Settings Set

The **General Settings** set allows you to configure general parameters for the radio.

3.7.1 General (General Settings)

This section explains the general setting for **General** set.

3.7.1.1 Subscriber Inactivity Timer (SIT) (ms)

The Subscriber Inactivity Timer (SIT) controls how long the repeater will continue transmitting with absence of subscriber activity on the uplink.

If the repeater is operating on shared-use frequencies, it cannot remain keyed indefinitely for the benefit of broadcasting synchronization signals to subscriber units. The repeater will likely be de-keyed most of the time; thereby requiring subscriber units to first activate the repeater (via the uplink frequency) and acquire synchronization (via the downlink frequency) before completing the call setup request and subsequent first transmission. The net result of these extra procedures is increased access time; therefore, it is desirable to avoid these steps, whenever possible. There is a trade-off to minimizing access time by keeping the repeater keyed for as long as practically possible, while

complying with the regulations regarding shared-use channels, which essentially require the repeater to dekey when the channel is not in use. This can be balanced with the use of the Subscriber Inactivity Timer.

The SIT timer starts when there is no inbound subscriber activity on either time slot (Slot 1 or 2) of a repeater. When the SIT timer expires, the repeater will stop transmitting until awoken again by a subscriber. To accommodate the reserved hang time after each transmission, the SIT timer should always be equal or greater than the Hang Time (group, private, or emergency hang time; whichever the longest) in the repeater. This will allow the reserved hang time and a short unreserved hang time after each transmission prior to the repeater dekeying. If shared use is not a concern, the SIT timer can be set to the maximum value. If shared use is a concern, the SIT timer should be set equal to or slightly longer than the configured call hang timers.

For Connect Plus, the SIT value that is programmed with MOTOTRBO RM will be overwritten by the XRC when it establishes its link with the repeater. The SIT value is not programmable in the MOTOTRBO Connect Plus Network Manager, but the XRC does consider other Network Manager-configurable values (the Call Hang Timers) when setting the SIT. The repeater will use the SIT value supplied by the XRC as long as it maintains connectivity to the controller. It is important to know that MOTOTRBO RM always displays the RM-configured value, even when connected to the XRC. The repeater utilizes the RM-configured value when it doesn't have a connection to the XRC (such as when the repeater is operating in Conventional Fallback mode).

For Capacity Plus–Single-Site and Capacity Plus–Multi-Site, the SIT should be set greater than the longest hang timer to avoid the possibility of missing the Capacity Plus–Single-Site Status CSBK transmitted at the end of a call. This ensures that the radio moves to either the rest channel or to another active call of interest in the most efficient way possible.

Range:

Maximum	Minimum	Increment
7000 ms	1000 ms	500 ms

NOTICE:
This feature is disabled if Repeater Mode is set to Analog.

This feature is supported in Digital mode only.

3.7.1.2
GNSS

Global Navigation Satellite System (GNSS) is a satellite navigation system that is used to determine a radio's precise location.

This feature allows the dispatcher to monitor a radio's current position. The required GNSS hardware is built into the radio on GNSS equipped models.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

This feature is available only for GNSS models.

3.7.1.3
GNSS

This drop-down list allows you to choose the global navigation satellite system for the radio.

The possible choices depend on the GNSS hardware available in the radio. The choices may be a combination of GNSS, GLONASS, Beidou, Galileo, and QZSS (in that order and separated by

slashes). If there are two chips in the radio that supports those combinations, you may have GNSS/GLONASS, Beidou/QZSS as the choices.

NOTICE:
This feature is grayed out when GNSS is unchecked.

3.7.1.4 Private Calls

This field allows you to enable or disable the initiation of a Private Call on a digital channel.

When disabled, a prohibit tone will sound when the user tries to initiate a Private Call. You can continue to receive and respond to Private Calls, and is still able to initiate Call Alerts. This is a radio-wide feature.

NOTICE:
This feature is supported in Digital mode only.

This feature is not applicable for Capacity Max system.

3.7.1.5 Site Search Timer (sec)

This field allows you to adjust the value of the Site Search Timer.

The timer begins immediately after an Active Site Search has identified the nearest available site, and allows a period of time for you to use the Site Lock feature, or to repeat the Active Site Search to find the next available site. When the timer expires, the radio reverts back to auto roam if the Site Lock feature is disabled. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
255 sec	0 sec	1 sec

NOTICE:
This feature is supported in Digital mode only.

3.7.1.6 ARS Initialization Delay (min)

This field allows you to configure the duration of the random range delay before an Automatic Registration Service (ARS) registration.

When many radios, for instance a hundred radios, power up at the same time, channel collisions will happen and it will take a long time for all the radios to register successfully. The user can avoid this by configuring different delay durations for the radios. For example, setting the timer to 0 minute corresponds to the radio using a random timer from 5 to 15 seconds to send the ARS. Setting the timer to 30 minutes corresponds to the radio using a random timer from 5 seconds to 30 minutes to send the ARS. Setting the timer to 60 minutes corresponds to the radio using a random timer from 5 seconds to 60 minutes to send the ARS, and so forth. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
240 min	0 min	30 min

NOTICE:
This feature is supported in Digital Mode only.

3.7.1.7
TX Preamble Duration (ms)

Preamble is a string of bits added in front of a data message or control message (Text Messaging, Location Messaging, Registration, Radio Check, Private Call, and other data message or control message) before transmission.

This preamble prolongs the message in order to reduce the chances of the message being missed by the receiving radio. The Transmit (TX) Preamble Duration sets the duration of the preamble. This duration needs to be increased as the number of scan members increases on the target radio (refer to the *MOTOTRBO System Planner* for guidance on how to set the duration). This value can be increased in all the transmitting radios if scanning radios are often missing data messages. However, a larger preamble occupies the channel longer. Therefore, increasing the Transmit Preamble duration will increase the success rate of data received while other radios are scanning, but will decrease the amount of data that can be transmitted on the channel. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
8640 ms	0 ms	60 ms

NOTICE:
The TX Preamble feature is disabled if the duration is set to 0.

If the Portable is configured in single site conventional repeat mode and Battery Saver is disabled, this feature should not be set to 0. This recommendation applies if MTR base radios/ repeaters are being used in single site conventional system.

This feature is supported in Digital mode only.

3.7.1.8
Voice Pretime Duration

This field allows you to configure call setup duration by allowing you to add a pretime burst transmission to the call.

This duration allows radios, with Scan enabled, enough time to connect to the channel before audio is transmitted.

The following table lists the recommended **Voice Pretime Duration** setting:

Table 38: Recommended Voice Pretime Duration

Radios with Scan Enabled	Voice PreTime Duration (ms)	
	TPT Disabled	Direct Mode/Repeater Mode (TPT Enabled)
1	n/a	n/a
2	120	60
3	240	180
4	300	240
5	420	360
6	540	480
7	660	600
8	720	660

Radios with Scan Enabled	Voice PreTime Duration (ms)	
	TPT Disabled	Direct Mode/Repeater Mode (TPT Enabled)
9	840	780
10	960	900
11	1080	1020
12	1260	1200
13	1440	1380
14	1560	1500
15	1740	1680
16	1860	1800
16	2280	2220

NOTICE:

- The Talk Permit Tone on page 252 (TPT) is delayed.
- Motorola Solutions recommends to get experts advise before configuring this field. The modification of this field impacts the performance of ongoing calls.

Table 39: Range

Maximum	Minimum	Increment
2400 ms	0 ms	60 ms

3.7.1.9 TX Inhibit Quick Key Override

This feature allows transmission to be sent on a busy channel.

If **TX Inhibit Quick Key Override** is enabled, double press the **PTT** button within 1 second to send transmission on a busy channel.

NOTICE:
This feature is supported in Analog mode only.

3.7.1.10 Monitor Type

This field allows you to set the Monitor mode to either Open Squelch or Silent.

You can access the Monitor feature by assigning a short or long programmable button press (Monitor (Portable only) or Permanent Monitor) or assigning and asserting a GPIO pin (Monitor (Mobile only)) to its active level. This is a radio-wide feature.

Open Squelch

Radio unmutes regardless of whether there is any channel activity. If no activity is present, noise is heard through the speaker.

Silent

Radio unmutes only if there is channel activity.

NOTICE:
If the Monitor feature is activated by pressing the button or triggering the pin assigned to the Monitor option, the PL Type feature in Scan will be overridden, if PL Type is enabled.

This feature is supported in Analog mode only.

3.7.1.11 Intermediate Frequency Filter (KHz)

Selects the appropriate intermediate frequency filter bandwidth value to be used on a radio wide basis from the choices of 7.8 or 5.76.

NOTICE:
This feature is supported in 3600 Trunking capable radios only.

3.7.1.12 Min Speaker Volume Level (dB)

This field allows you to set the minimum audio level that the radio produces regardless of the volume selector level on the radio.

The minimum level prevents you from turning the radio volume level too low and forgetting to turn it back up, thus missing calls. This is a radio-wide feature.

MOTOTRBO 2.0 Range:

Maximum	Minimum	Increment
12 or Muted (Portable), 18 or Muted (Mobile) dB	-30 (Portable), -39 (Mobile) dB	1 dB

MOTOTRBO 3600 Trunking Range:

Maximum	Minimum	Increment
9 or Muted (Portable), -1 or Muted (Mobile) dB	-52 (Portable), -47 (Mobile) dB	1 dB

NOTICE:
The maximum and minimum range showed in these tables vary by radio models. The range displayed for the model may be different than what is shown above.

Selecting Muted mutes the radio speaker when the audio level is adjusted to the minimum.

This feature overrides any value set in Volume Offset (dB) on page 252 if set to any value other than Muted.

3.7.1.13 Min Speaker Volume Muted

This field allows you to set the minimum audio level that the radio produces regardless of the volume selector level on the radio.

3.7.1.14 Unlink Monitor

This field allows you to set the Permanent Monitor feature to ignore the Admit Criteria setting.

If Admit Criteria is set to Channel Free, you must enable Unlink Monitor for Permanent Monitor to function. If Admit Criteria is set to Always, Unlink Monitor has no effect.

3.7.1.15
Off-Hook Disables PL

If enabled, the Mobile unmutes to all channel activity when the microphone is off the hook.

There will be no checking for Private Line (PL). This is a radio-wide feature.

NOTICE:
Enabling this feature overrides the Admit Criteria feature when the microphone is off the hook, if the Admit Criteria is set to Always. Enabling this feature also overrides the PL Type feature in Scan when the microphone is off the hook, if PL Type is enabled.

This feature is supported in Analog mode only.

3.7.1.16
Group Call Hang Time (ms)

Sets the duration the repeater reserves the channel after the end of a group call transmission.

During this time, only members of the Group that the channel is reserved for can transmit. This produces smoother conversation.

Range:

Maximum	Minimum	Increment
7000 ms	0 ms	500 ms

NOTICE:
Do not set this value to 0 ms for repeaters in Capacity Plus–Single-Site and Capacity Plus–Multi-Site systems.

This feature is disabled if Repeater Mode is set to Analog.

The value of this feature must be equal to or less than the Subscriber Inactivity Timer (SIT) (ms) on page 210 value.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.7.1.17
Private Call Hang Time (ms)

Sets the duration the repeater reserves the channel after the end of a private call transmission.

During this time, only the individuals involved in the call that the channel is reserved for can transmit. This produces smoother conversation. The user may want to set a longer hang time than the Group Call Hang Time as an individual tends to take a longer time to reply (talkback) in a Private Call.

Range:

Maximum	Minimum	Increment
7000 ms	0 ms	500 ms

NOTICE:
Do not set this value to 0 ms for repeaters in Capacity Plus–Single-Site and Capacity Plus–Multi-Site systems.

This feature is disabled if Repeater Mode is set to Analog.

The value of this feature must be equal to or less than the Subscriber Inactivity Timer (SIT) (ms) on page 210 value.

This feature is supported in Digital mode only.

3.7.1.18

Emergency Call Hang Time (ms)

Sets the duration the repeater reserves the channel after the end of an emergency call transmission.

During this time, only members of the Group that the channel is reserved for can transmit. This produces smoother conversation. The user may want to set the longest hang time as compared to the Private and Group Call Hang Time to reserve the channel long enough to receive an emergency response.

Range:

Maximum	Minimum	Increment
7000 ms	0 ms	500 ms

NOTICE:
Do not set this value to 0 ms for repeaters in Capacity Plus–Single-Site and Capacity Plus–Multi-Site systems.

This feature is disabled if Repeater Mode is set to Analog.

The value of this feature must be equal to or less than the Subscriber Inactivity Timer (SIT) (ms) on page 210 value.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.7.1.19

Talkaround Group Call Hang Time (ms)

This field allows you to set the duration during which a radio will talk back to a received call or continue a transmitted Talkaround Group Call using the previously received or previously transmitted digital group ID.

After expiration of the Talkaround Group Call Hang timer, the radio will transmit using the TX Contact Name (digital group) specified for this channel in Radio Management .

Range:

Maximum	Minimum	Increment
7000 ms	0 ms	500 ms

NOTICE:
This feature is supported in Digital mode only.

3.7.1.20

Talkaround Private Call Hang Time (ms)

This field allows you to set the Private Call Talkback Time for use during the talkaround operation.

This feature sets the duration the radio keeps the Talkaround Private Call setup after the user releases the Push-to-Talk (PTT) button. This is to avoid setting up the call again each time the user presses the PTT to transmit. During this time, other radios can still transmit since the channel is essentially idle. After the hang timer expires, the radio transmits using the TX Contact Name specified for this channel in Radio Management .

Range:

Maximum	Minimum	Increment
7000 ms	0 ms	500 ms

NOTICE:
This feature is supported in Digital mode only.

3.7.1.21

Call Hang Time (sec)

Sets the duration the repeater will reserve the channel for after the end of an analog call transmission.

During this time, only members of the call that the channel is reserved for can transmit. This produces smoother conversation. As this hang timer is shared among all types of analog calls (Group, Private, Emergency etc.), the duration should be set following the call type that needs the longest hang time.

Range:

Maximum	Minimum	Increment
7 sec	0 sec	1 sec

NOTICE:
This feature is enabled if Repeater Mode is set to Analog.

3.7.1.22

Repeat Gain (dB)

This feature is used to adjust a repeater's gain value in order to maintain uniform audio levels across channels in a multi-repeater system.

Uniform audio levels are necessary to keep the radio user from having to constantly adjust the volume levels when changing channels.

Range:

Maximum	Minimum	Increment
6.0	-6.0	0.5

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.7.1.23

Antenna Relay Delay Timer (ms)

When the repeater with a single antenna operates as a base station, this feature is used to adjust the duration it takes for switching to occur before the repeater can begin transmitting.

When the Repeater is initiated to begin a transmission, it asserts the GPIO pin (Antenna Relay) to its active level on the accessory port, and waits for this timer to expire before beginning to transmit. The repeater switches the antenna back to the RX port and sets the GPIO pin to its inactive state after it stops transmitting. The duration set depends on the type of accessory switch, or relay, being used to switch the antenna between ports. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
375 ms	0 ms	25 ms

NOTICE:
The Antenna Relay pin selection is assigned to a MOTOTRBO Repeater programmable output pin (Pin #19, #20, #21, #22, or #24), or a MTR3000 base radio/repeater programmable output pin (Pin #4, #5, #15, #21, #24, #8 and #25 or #10 and #12), and is triggered by the base radio/repeater. The base radio/repeater transmits if this pin is active and after the Antenna Relay Delay Timer expires.

For MTR3000 base radio/repeater, the Antenna Relay pin selection (X371BA), which uses the P10 backplane connector (not the J7), still requires a J7 GPIO to be mapped to the antenna relay function in order for the X371BA option to become operational.

This feature is applicable to MOTOTRBO Conventional and MTR3000 base radio/repeater and SLR Series repeaters in Analog mode only.

3.7.1.24
Digital/Band 1 TX Low Power (W)

Sets the Band 1 Transmit (TX) Low Power value of a Mobile or Repeater.

This is a radio-wide feature.

NOTICE:
This value must be lower than or equal to the Digital/Band 1 TX High Power (W) on page 219 value.

The range of power values is model dependent.

3.7.1.25
Digital/Band 1 TX High Power (W)

Sets the Band 1 Transmit (TX) High Power value of a Mobile or Repeater.

This is a radio-wide feature.

NOTICE:
This value must be greater than or equal to the Digital/Band 1 TX Low Power (W) on page 219 value.

The range of power values is model dependent.

3.7.1.26
Analog/Band 2 TX Low Power (W)

Sets the 900 MHz radio transmit (TX) low power value of a mobile.

This is a radio-wide feature.

NOTICE:
This value must be lower than or equal to the Analog/Band 2 TX High Power (W) on page 220 value.

The range of power values is model dependent.

This feature is applicable to MOTOTRBO conventional mobile and repeater 800/900 MHz and 3600 trunking capable mobile only.

3.7.1.27
Analog/Band 2 TX High Power (W)

Sets the 900 MHz radio transmit (TX) high power value of a mobile.

This is a radio-wide feature.

NOTICE:
This value must be greater than or equal to the Analog/Band 2 TX Low Power (W) on page 219 value.

The range of power values is model dependent.

This feature is applicable to MOTOTRBO conventional mobile and repeater 800/900 MHz and 3600 trunking capable mobile only.

3.7.1.28
Digital TX Low Power (W) (SL Series Mid-Tier)

Sets the Transmit (TX) Low Power value for SL Series Mid-Tier radios. This is a radio-wide feature.

NOTICE:
This value must be greater than or equal to the Digital TX High Power (W) (SL Series Mid-Tier) on page 220 value.

The range of power values is model dependent.

3.7.1.29
Digital TX High Power (W) (SL Series Mid-Tier) Note

If the MOTOTRBO Tuner has been used to re-tune the TX High Power (W) (SL Series Mid-Tier) to 2.5W, then the 3.0* settings in the TX High Power (W) (SL Series Mid-Tier) corresponds to the 2.5W instead of 3.0W.

3.7.1.30
Digital TX High Power (W) (SL Series Mid-Tier)

Sets the Transmit (TX) High Power value for SL Series Mid-Tier radios. This is a radio-wide feature.

NOTICE:
This value must be greater than or equal to the Digital TX Low Power (W) (SL Series Mid-Tier) on page 220.

The range of power values is model dependent.

In the factory default state, the power level 3.0* corresponds to 3.0W. If the MOTOTRBO Tuner is used to re-tune the High Power to 2.5W, then the 3.0* power level corresponds to 2.5W instead of 3.0W.

3.7.1.31
Analog TX Low Power (W) (SL Series Mid-Tier)

Sets the Transmit (TX) Low Power value for SL Series Mid-Tier radios. This is a radio-wide feature.

NOTICE: This value must be lower than or equal to the Analog TX Low Power (W) (SL Series Mid-Tier) on page 220 value.

3.7.1.32

Analog TX High Power (W) (SL Series Mid-Tier)

Sets the Transmit (TX) High Power value for SL Series Mid-Tier radios. This is a radio-wide feature.

NOTICE: This value must be greater than or equal to the Analog TX Low Power (W) (SL Series Mid-Tier) on page 220 value.

3.7.1.33

Band 1 DC TX Power (W)

Configures a repeater-wide Band 1 DC TX Power Level.

This feature allows the station to transmit at a different output power when operating from a DC source. When DC power is considered the backup power source, then the chosen value for DC TX Power is typically lower than the Digital/Band 1 TX Low Power (W) on page 219 and/or Digital/Band 1 TX High Power (W) on page 219 if longer runtimes are desired should the primary AC power source be interrupted.

NOTICE:
This feature must always be less than or equal to the value in Band 1 TX High Power (W).

3.7.1.34

Band 2 DC TX Power (W)

Configures a repeater-wide DC Tx Power Level for the 900 MHz band.

This feature allows the station to transmit at a different output power when operating from a DC source. When DC power is considered the backup power source, then the entered value for DC TX Power is typically lower than the Analog/Band 2 TX Low Power (W) on page 219 and/or Analog/Band 2 TX High Power (W) on page 220 if longer runtimes are desired should the primary AC power source be interrupted.

NOTICE:
This feature value must always be less than or equal to the value in Band 2 TX High Power (W).

3.7.1.35

12V DC TX Power (W)

This field allows the user to set the 12V DC transmit power in watts.

This is a radio wide feature.

NOTICE: The range of power values is radio dependent.

3.7.1.36

24V DC TX Power (W)

This field allows the user to set the 24V DC transmit power in watts.

This is a radio wide feature.

NOTICE: The range of power values is radio dependent.

3.7.1.37
Disable All LEDs

This field allows you to turn off all LEDs during radio power-up (except for repeater) and while radio is in use.

All LEDs are disabled including the backlight and power up LED, regardless of the backlight setting. This is a radio-wide feature.

NOTICE:
For SL Series Mid-Tier and MOTOTRBO Ion, enabling this checkbox only disables all LEDs. It does not turn off the keypad backlight.

3.7.1.38
Backup Repeater Connected

When disabled, the Repeater is operating in the standalone mode.

This feature should be enabled when the Repeater is intentionally operating as the primary Repeater in a redundant Repeater setup. In this setup, the secondary Repeater is operating in the standalone mode. This is a radio-wide feature.

NOTICE:
This feature is applicable to 32MB Repeaters only. Please refer to the MOTOTRBO Repeater Basic Service Manual for the Repeater model specification.

3.7.1.39
Sign In/Sign Out

This field allows you to sign in or sign out of a third-party server from the radio with the user's sign-in ID.

This feature shows an indication whether you has signed into the third-party server or not on the home screen of the radio. The sign-in information is kept until the radio powers down or you signs out manually. The Sign In/ Sign Out message follows the standard protocol of ARS User Register/ Deregister.

3.7.1.40
Secure Sign In ID

This check box allows you to specify whether or not the Sign In ID will be handled securely, like a password.

When this check box is checked, the Sign In ID will not be shown on the Home Screen and will be partially hidden when the entering the Sign In ID.

NOTICE:
This feature is grayed out when **Sign In/Sign Out** is unchecked.

3.7.1.41
TX Caller Alias

On a radio-wide basis, the Radio Management (RM) 2.0 allows the user to select the coding format for the Caller Alias. The options are **No**, **With UTF-8** or **With UTF-16BE**. The default value is **No**.

3.7.1.42
Caller Alias

On a radio-wide basis, the Radio Management (RM) 2.0 allows the user to enter a Caller Alias. The Caller Alias field cannot be empty when enabled. The maximum length of the radio name is 16 characters for UTF-8 format, and 13 characters for UTF-16BE format.

3.7.1.43
Edit Caller Alias

On a radio-wide basis, the Radio Management (RM) 2.0 allows the user to enable and disable the subscribers from sending Caller Alias as inband data service.

When this feature is enabled, radios can accept or modify, update, or save the **Caller Alias** through front panel. The user can select one of the following choices to edit the caller alias: **Fixed**, **Radio Menu** or **Radio Menu and Power Up**. The default value is **Fixed**.

NOTICE: Edit Caller Alias is enabled when TX Caller Alias on page 222 is enabled first.

3.7.1.44
Test Mode

When **Test Mode** is enabled, the radio enters into the normal Test Mode when pressing the **side button** or **programmable button two** for five times within 10 seconds of power-up.

For Portable only, the radio enters into the ART chamber Test Mode when the side button 1 is pressed for five times within 10 seconds of power-up.

3.7.1.45
Scrambling Frequency

This field allows you to select the required scrambling frequency.

The following are the available choices:

- 3.29 kHz
- 3.39 kHz
- 3.50 kHz

3.7.1.46
Battery Type

For XiR C1200, XiR C2620, and XiR C2660 radio models, battery type cannot be detected by the radio automatically.

The user will have to select the battery type via radio menu or, for non-display radio models, via programmable button. The radio comes with battery type programmable button pre-configured, as well as the Voice Announcement enabled and Motorola pre-recorded Li-Ion Battery Selected or NiMH Battery Selected voice file pre-mapped. Selected battery type is preserved by the radio through power cycle and firmware upgrades. Therefore, the user only needs to select the battery type when the user changes to a different battery type. Li-Ion is the default battery type. Li-Ion will remain the selected battery type if user does not select a new battery type. Selecting the wrong battery type affects the accuracy of the battery capacity indicator and the low battery status of the radio. This drop-down list allows the user to configure the battery type.

Li-Ion
If the user is using a Li-Ion battery, select this option to allow the radio to detect the battery type.

NiMH

If the user is using a NiMH battery, select this option to allow the radio to detect the battery type.

NOTICE:

- If a R02.07.xx.xxxx firmware supports both the NNTN8560 and PMNN4489 batteries on MOTOTRBO 2.0 and MOTOTRBO 2.5 radios. Both batteries have been certified for use on both MOTOTRBO 2.0 and MOTOTRBO 2.5 radios.
- For R02.60.xx firmware, the NNTN8560 and PMNN4489 batteries were not cross-certified for MOTOTRBO 2.0 and MOTOTRBO 2.5 radios. Therefore, NNTN8560 is only compatible with MOTOTRBO 2.5 radios and PMNN4489 battery is only compatible with MOTOTRBO 2.0 radios.

3.7.1.47
Home Channel Zone

This drop-down list allows you to select the Zone from a list of Zone Sets that will be used for the Home Channel.

The available options are **None** or any of the available **Zone** Sets.

NOTICE:
This feature is applicable to MOTOTRBO 2.0 radios only.

3.7.1.48
Home Channel

This drop-down list allows you to choose a channel as the Home Channel. The Home Channel is the channel that you use most of the time.

The radio plays a reminder when the user has been away from the Home Channel for too long, based on the Home Channel Reminder Interval (min). The radio emits a tone when playing the reminder. The radio then tells you that the current channel is a non-home channel by using the current selected announcement mechanism.

This feature cannot be used with inhibited or Option Board Trunking channels. The options for this feature are None and all personalities that are not in the Channel Pool grid.

NOTICE:

- This feature is applicable to MOTOTRBO 2.0 radios only.

3.7.1.49
Home Channel Reminder Interval (min)

This field allows the user to set the length of the radio's waiting time after each reminder, before the radio plays another reminder telling the user that the current selected radio channel is not the Home Channel.

NOTICE:

- This feature is applicable to MOTOTRBO 2.0 radios only.

3.7.1.50
Antenna Selection

This field allows the user to select the antenna type used by the radio.

The following antenna types are supported:

- **Stubby**

- **Whip 1 (136MHz-144MHz)**
- **Whip 2 (144MHz-156MHz)**
- **Whip 3 (156MHz-174MHz)**

NOTICE:

- User must ensure that the antenna selected in this field must match with the antenna attached to the radio. If mismatched, user can expect a degraded TX/RX performance.
- This selection is only applicable for selected radios.

3.7.1.51 Illegal Carrier Timer

This feature is used to set the illegal carrier timer.

Range:

Maximum	Minimum	Increment
250 sec	1 sec	1 sec

3.7.1.52 Illegal Carrier RSSI Threshold

This field allows the user to set the illegal carrier RSSI (Received Signal Strength Indication) Threshold.

Range:

Maximum	Minimum	Increment
-40 dBm	-130 dBm	1 dBm

3.7.1.53 Illegal Carrier Feature Enable

This check box allows the user to enable the illegal carrier feature.

3.7.1.54 Radio Keep Alive

Allows the user to enable/disable the keep alive signal without interfering with voice communication. This is a radio-wide feature.

NOTICE:
This feature is only applicable for Single Site mode.

This feature depends on the Digital feature.

3.7.1.55 Codeplug Password

This feature sets a password for the current codeplug.

The password prompt appears when users attempt to do any of these features: read, write, clone, or remote update. This is a radio-wide feature.

Codeplug Password Deprecation Notice

Starting M2021.01 release, Codeplug Password feature is deprecated for selected radio and repeater models. However, this feature is remained active for the archived file Codeplug Password.

You are recommended to use the TLS-PSK Authentication feature for these radios and repeaters. The Codeplug Password feature is remained to facilitate the transition to TLS-PSK Authentication, but Motorola Solutions is no longer providing support for Codeplug Password feature. Codeplug Password could be removed in a future release.

The deprecation affects you if you are using Codeplug Password to set password for the current radio or repeater codeplug.

TLS-PSK Authentication feature is introduced in R2.10.05 release. The feature is available for selected radio and repeater models. TLS-PSK Authentication ensures an enhanced security communication between radio or repeater and customer programming tool. For more information, refer to New Features for MOTOTRBO Release 2.10.5 training service.

Table 40: Applicable Radio and Repeater Models

Regions	Radios		Repeaters
NA	XPR 7000/7000e series	XPR 3000/3000e series	SLR 1000 series
	XPR 7000/7000e IS series	SL3500e	SLR 5700 series
	XPR 5000/5000e series	XPR 2500	SLR 8000 series
	SL 7000/7000e series		
LACR	DGP 8000/8000e/ 5000/5000e series	DEP 500/500e series	SLR 1000 series
		SL500e	SLR 5100 series
	DGM 8000/8000e/ 5000/5000e series	DEM 500	SLR 8000 series
	DGP 8050/8050e elite		
	SL 8000/8000e series		
EMEA	DP 4000/4000e series	SL2600	SLR 1000 series
	DM 4000/4000e series	DP2000/DP2000e	SLR 5500 series
	DP 3000/3000e series	DM2600	SLR 8000 series
	SL 4000/4000e series		
APAC	XiR P8000/8000i series and CP/GP derivatives	SL2M	SLR 1000 Series
		XiR P6000/6000i series	SLR 5300 series
	XiR M8000/8000i series and CM derivatives	XiR M6660	SLR 8000 series
	XiR E8600/E8600i series		
	SL1K and SL2K		

Setting Password for Codeplug

1 Enter up to a maximum of eight characters. Valid characters are alphanumerics, spaces, and special characters. Trailing spaces are ignored. The password is masked by solid dots.

2 Save the changes and close the codeplug file. In addition, if the user wants to set a password on the radio, write the file to the radio. The password prompt appears the next time the user tries to open this codeplug file or read/write from/to the radio.

Removing Previously Set Password from the Codeplug

1 Clear the Codeplug Password text box.

2 Save the changes. If the user wants to clear the password on the radio, write the file to the radio, at which time they will be prompted for their current password.

3 Close the archived file. The user will not be prompted the next time they try to open this file or read/write from/to the radio.

NOTICE:

- There is no known method of retrieving a lost or forgotten password. The radio can only be recovered using the Device Recover feature to load the default codeplug into the radio.
- Password in the archive is validated while opening an archive.
- After the user has performed a read operation using a valid master password, this feature is set to the default value. This dependency is only applicable when Check for Password is visible.
- The user is not allowed to input all space as password.
- Password is case-sensitive.

3.7.1.56
Check for Password

This drop-down list allows the user to select the password policy for the codeplug password.

Choices are None, Read Only, and Read/Write.

NOTICE:
This drop-down list is applicable for mobile and portable radios only.

This drop-down list is greyed out and set to None when Codeplug Password is blank.

The default value for this drop-down list is Read Only when Codeplug Password is not blank.

If the user selects Read/Write, password will be required during read, write, clone, recover, and convert operations.

3.7.1.57
Maximum Check for Password Attempts

This configuration allows the user to specify how many attempts to enter the codeplug password is allowed by the radio before the radio is locked.

NOTICE:
This feature is greyed out and set to the default value when Check for Password is set to None or Read Only.

3.7.1.58
Radio Certification Type

This field allows you to choose the Radio Certification. The choices are **FM**, **None**, and **UL**.

3.7.1.59
Respond Caller

This field also allows you to control the PTT behavior on the Capacity Max Status in the Notification List.

Choices are **0 (False)** and **1 (True)**.

If **1 (True)** is selected, the radio follows the MOTOTRBO radios behavior of responding with a private call.

If **0 (False)**, pressing the **PTT button** causes the radio goes back to home screen and start a UKP call.

3.7.1.60
Radio Language Display

Allow the user to select the default language for the radio display.

Applicable to full keypad and light keypad display models for MOTOTRBO 2.0 and MOTOTRBO 2.0 LIGHT radios.

3.7.1.61
Digital or Analog BSI

This field allows the user to configure the BSI transmission in either Digital or Analog format.

Select 0 for Analog BSI or 1 for Digital BSI. The default value is 0.

3.7.1.62
Mute Timer (hour)

This feature enables privacy when the user enters into a quiet environment (for example, an important meeting) and the user does not expect the radio to play out any audibles such as over the air (OTA) voice, tone, voice announcements, or Text to Speech announcements.

The mute mode feature provides the functionality to address such scenarios.

The following selections are supported:

Table 41: Range

Range	Increments
Minimum	0.5 hours
Maximum	6 hours
Increment	0.5 hours

3.7.1.63
Face Down Mute Enable

This feature determines if the face down detection function is enabled or not.

When the checkbox is enabled, the radio enters Mute Mode when radio is switched to face-down position and exit mute mode when radio leaves face-down position. This feature is for non-display radio models.

3.7.1.64
Radio On Indicator

This feature enables the radio to control the LED indicator.

When enabled, the green LED on the radio periodically blinks after power up to indicate that the radio is on.

3.7.1.65
Remote Radio Control

This feature enables an admin to turn the Wi-Fi on or off remotely through a supervisory radio.

NOTICE: Only an admin can operate the supervisory radio.

3.7.1.66
Virtual Channel Stop

This field allows you to enable or disable **Virtual Channel Stop** feature.

If **Virtual Channel Stop** is enabled, the radio stops proceeding beyond the first or the last channel, and a tone is heard.

3.7.2
Battery (General Settings)

The **Battery** section of the General set contains the following fields:

3.7.2.1
Battery

This check box allows the user to indicate whether or not the battery is supposed to be connected.

NOTICE:
If the user is operating under a single DC source, the user must check this box and DC Operation Only. This ensures theLow Battery Alarm to be displayed when the battery is nearing end of usefulness.

3.7.2.2
DC System Nominal

This field allows the user to choose the nominal voltage for the radio. The choices are 12V and 24 V.

3.7.2.3
DC Operation Only

This feature enables or disables the AC Power Alarm.

This feature should be enabled when the repeater is intentionally operating in DC (Direct Current) mode. This is a radio-wide setting.

NOTICE:
When DC Operation Only is enabled, DC Primary Source, Battery Charging and Output Charger Voltage is disabled (grayed out).

This feature is applicable to MTR3000 and MOTOTRBO SLR Series repeater releases only.

3.7.2.4
DC Primary Source

This check box allows the user to set the DC port as the primary power source.

NOTICE:
This check box is disabled if the user enables DC Operation Only.

To avoid the short battery charge cycle loop between 10.5 V and 11.0 V, the user cannot enable DC Primary Source and Battery Charging on page 230 at the same time.

3.7.2.5
Battery Charging

This check box allows the user to enable or disable battery charging.

The user can then set the Output Charger Voltage (V) accordingly. This feature is unchecked by default. In MOTOTRBO SLR Series repeaters, the charge type is trickle charge.

NOTICE:
This check box is disabled if the user enables DC Operation Only.

To avoid the short battery charge cycle loop between 10.5 V and 11.0 V, the user cannot enable DC Primary Source and Battery Charging on page 230 at the same time.

3.7.2.6
Output Charger Voltage (V)

This configuration allows the user to configure the Output Charger Voltage (V) value.

Range:

Maximum	Minimum	Increment
15.5	0.0	0.1

NOTICE:
This check box is disabled if the user enables DC Operation Only.

3.7.2.7
Output Charger Voltage 12V (V)

This configuration allows the user to configure the Output Charger Voltage 12V (V) value.

Range :

Maximun	Minimum	Increment
14.2	13.5	0.1

3.7.2.8
Output Charger Voltage 24V (V)

This configuration allows the user to configure the Output Charger Voltage 24V (V) value.

3.7.3
Alarm Type (General Settings)

The **Alarm Type** section of the General set contains the following fields:

3.7.3.1
Reference Clock Source Type

This drop-down list allows the user to select reference clock source type.

The choices are Internal Only, External Only and Internal Fallback.

NOTICE:
This drop-down list is only available for MOTOTRBO SLR Series repeaters only.

3.7.3.2
External Clock Frequency

This drop-down list allows the user to select external clock frequency, the choices of 5MHz and 10MHz .

NOTICE:
This drop-down list is enabled if Reference Clock Source Type is set to External Only or Internal Fallback.

This drop-down list is only available for MOTOTRBO SLR Series repeaters only.

3.7.3.3
RF Power Control Alarm

This drop-down list allows the user to select alarm type for PA power control alarm.

The choices are Major, Minor, and Informational. This alarm is triggered when transmit output power is higher than set output power or not zero when de-keyed.

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.3.4
Power Unleveled Alarm

This drop-down list allows the user to select alarm type for power unleveled alarm.

The choices are Major, Minor, and Informational. This alarm is triggered when PA output power is more than 3dB below the set output power and no Fan, Temperature, Voltage, or VSWR alarms are present.

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.3.5
Modem PA Alarm

This drop-down list allows the user to select alarm type for modem PA alarm.

The choices are Major, Minor, and Informational. This alarm is triggered when Current draw of modem board is outside of specification.

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.3.6
Temperature Alarm

This drop-down list allows the user to select alarm type for modem PA Temperature alarm.

The choices of Major, Minor, and Informational.

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.3.7 Power Roll-back Alarm (2dB)

This drop-down list allows the user to select alarm type for Power Roll-back Alarm (2dB).

The choices are Major, Minor, and Informational. This alarm is triggered when PA output power is between 2dB to 3dB below the set output power, at least one of the following "primary" alarms also present: any Fan Alarm, any Temp Alarm, Modem Voltage Alarm, VSWR Minor Alarm, or VSWR Major Alarm.

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.3.8 Power Roll-back Alarm (3dB)

This drop-down list allows the user to select alarm type for Power Roll-back Alarm (3dB).

The choices are Major, Minor, and Informational. This alarm is triggered when PA output power is more than 3dB below set output power, at least one of the following "primary" alarms is also present: any Fan Alarm, any Temp Alarm, PA Voltage Alarm, or VSWR Alarm.

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.3.9 VSWR Minor Alarm

This drop-down list allows the user to select alarm type for VSWR Minor alarm.

The choices are Major, Minor, and Informational. This alarm is triggered when the Voltage Standing Wave Ratio (VSWR) of the equipment the station is coupled to, is between a 3:1 to 5:1.

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.3.10
VSWR Major Alarm

This drop-down list allows the user to select alarm type for VSWR Major alarm.

The choices are Major, Minor, and Informational. This alarm is triggered when the Voltage Standing Wave Ratio (VSWR) of the equipment the station is coupled to, is greater than a 5:1.

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.3.11
PA Temp Alarm

This drop-down list allows the user to select alarm type for PA Temp alarm.

The choices are Major, Minor, and Informational. This alarm is triggered when PA temperature is outside specified limits.

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.3.12
PA Fan Alarm

This drop-down list allows the user to select alarm type for PA Fan alarm.

The choices are Major, Minor, and Informational. This alarm is triggered when PA fan failed.

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.3.13
Power Supply Fan Alarm

This drop-down list allows the user to select alarm type for Power Supply Fan alarm.

The choices are Major, Minor, and Informational. This alarm is triggered when Power Supply fan failed.

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.3.14
Power Supply Over Temperature Alarm

This drop-down list allows the user to select alarm type for Power Supply Over Temperature alarm.

The choices are Major, Minor, and Informational. This alarm is triggered when Power Supply temperature is outside specified limits which would allow rated power to be generated. Power supply will shut down until temperature returns to a usable level.

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.3.15
AC Power Alarm

This drop-down list allows the user to select alarm type for AC Power alarm.

The choices are Major, Minor, and Informational. This alarm is triggered when the AC power source has been interrupted and the station is operating on DC power.

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.3.16
Bad Battery Alarm

This drop-down list allows the user to select alarm type for Bad Battery alarm.

The choices are Major, Minor, and Informational. This alarm is triggered when Battery charger is unable to charge the battery.

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.3.17
Low Battery Alarm

This drop-down list allows the user to select alarm type for Low Battery alarm.

The choices are Major, Minor, and Informational. This alarm is triggered when battery is nearing end of usefulness. It will clear after the battery charges sufficiently.

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.3.18
Battery Disconnected Alarm

This drop-down list allows the user to select alarm type for Battery Disconnected alarm.

The choices are Major, Minor, and Informational. This alarm is triggered when battery is not connected properly. Will clear when battery is connected.

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.3.19
Modem Fan Alarm

This drop-down list allows the user to select alarm type for Modem Fan alarm.

The choices and Major, Minor, and Informational. This alarm is triggered when Modem fan failed.

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.3.20
Illegal Carrier Alarm

This fields allows the user to select the Illegal Carrier Alarm type.

The following types are supported:

- **Informational** (default)
- **Major**
- **Minor**

NOTICE:

- This drop-down list is only available for MOTOTRBO SLR Series repeaters only.
- The repeater enters into a locked state if any major alarms are detected. It can be unlocked by power cycle or reset with the RDAC application. For more information, refer to the *System Planner*.

3.7.4
CWID (General Settings)

The **CWID** section of the General set contains the following fields:

3.7.4.1
ID

This ID consists of identification characters that are assigned by the local regulatory agency and are periodically transmitted in Morse Code over the air.

The user may enter up to a maximum of 44 characters. Trailing spaces are ignored. The ID's Character range is shown as below.

Name	Character
Number	0–9
Alphabet	A-Z
Space	
Quote	‘
Double Quote	“
Question Mark	?
Colon	:
Period	.
Forward Slash	/
Open parenthesis	(
Close parenthesis	)
Exclamation mark	!

NOTICE:
If this feature is left blank, all the CWID features are disabled.

3.7.4.2 Tone Frequency (Hz)

Specifies the frequency at which the Continuous Wave Identification (CWID) is transmitted.

Range:

Maximum	Minimum	Increment
2000 Hz	400 Hz	200 Hz

NOTICE:
This feature is disabled if the ID field is blank.

3.7.4.3 TX Interval (min)

The station will generate a Continuous Wave Identification (CWID) on certain conditions. The conditions are as follows:

- when the repeater has no other repeat audio requests (either analog or digital)
- analog or all digital hang time has finished, and
- the programmed transmission interval timer period has expired

This feature should be set to a period shorter than the Mix Mode Timer to allow the station the opportunity to send a CWID at the end of a set of user radio exchanges prior to having to send the ID mixed with analog repeat audio.

Range:

Maximum	Minimum	Increment
255 min	5 min	1 min

NOTICE:
This feature is disabled if the value is set to 255.

This feature is disabled if the ID field is blank.

3.7.4.4
Configuration Bits

The configuration bits allows for future configuration requirements of the radio and to enhance the future operational capabilities of the radio if and when required.

The format of the options is a 2 digit hexadecimal number that is represented by a 8-bit binary image. For this feature, the last two bits of the configuration byte is used to tune the decode tone duration of the 5 Tone predefined signaling standards.

Option	Functionality
0	Bit 0: 0, Bit 1: 0. See Configuration byte.
1	Bit 0: 1, Bit 1: 0. See configuration byte.
2	Bit 0: 0, Bit 1: 1. See configuration byte.
3	Bit 0: 1, Bit 1: 1. See configuration byte.

NOTICE:
This feature is supported in Analog mode only.

3.7.4.5
Mix Mode Timer (min)

The station will generate a Continuous Wave Identification (CWID) mixed with analog audio when the repeater is repeating analog signals or is in analog hang time and the programmed mix mode timer has expired.

This feature should be set to a period longer than the TX Interval to allow the station the opportunity to send a CWID by itself at the end of a set of user radio exchanges rather than having to send the ID mixed with analog repeat audio.

Range:

Maximum	Minimum	Increment
255 min	5 min	1 min

NOTICE:
This feature is disabled by the repeater if the value is set to 255.

This feature is disabled if the ID field is blank.

This feature is not applicable to digital repeater operation as CWID will not be generated while digital repeat is in progress.

This feature is not applicable to Dynamic Mixed Mode.

3.7.4.6
Rate (WPM)

This feature is used to specify the Continuous Wave Identification (CWID) transmission rate, which is measured in words per minute.

The maximum transmission rate allowed varies across different countries and radio services. The repeater has more time to repeat audio signals when the CWID is transmitted at a higher rate.

Range:

Maximum	Minimum	Increment
30	15	5

NOTICE:
This feature is disabled if the ID field is blank.

3.7.4.7
Strip PL

If enabled, Continuous Wave Identification (CWID) is transmitted without PL tone or DPL code.

NOTICE:
This feature is disabled if Repeater Mode is set to Digital.

This feature is disabled if the ID field is blank.

3.7.5
Voting (General Settings)

The **Voting** section of the General set contains the following fields:

3.7.5.1
Operation Mode

This feature allows the user to configure the Operation Mode feature.

Normal Repeater
Allows the repeater to operate with both Transmitter and Receiver RF functionality without Digital Voting feature.

Analog Satellite Receiver
Limits the repeater's RF functionality to analog receive only in both voting and non-voting systems.

Digital Satellite Receiver
Limits the repeater's RF functionality to digital receive only in voting systems.

Digital Voting Repeater

Allows the repeater to operate with both transmitter and receiver RF functionality with the Digital Voting feature.

WARNING:
When changing from Analog Satellite Receiver or Digital Satellite Receiver to Normal Repeater, the MTR3000 Satellite Receiver will become disabled after power up.

The Analog Satellite Receiver option is only available for MTR3000 repeaters only.

The Digital Voting Repeater option is hidden when the Digital Voting feature is disabled.

When the user set this feature to Analog Satellite Receiver or Digital Satellite Receiver, all transmit parameters in the TX in all channels will be non-editable (greyed-out).

Setting this feature to Analog Satellite Receiver or Digital Satellite Receiver will also greyed-out the Offset (MHz), Dual Capacity Direct Mode (DCDM), and Copy buttons in all channels.

When the user sets this feature to Normal Repeater or Digital Voting Repeater, the application displays a dialog box warning the user to configure MTR3000 Satellite Receiver models as a Satellite Receiver in order to function. This dialog prompts out after the user modifies this feature only. This dependency applies to MTR3000 repeaters only.

3.7.5.2 Digital Voter Peer ID

This feature allows the user to set the Digital Voter Peer ID for a Voting Repeater (that the current satellite receiver belongs to).

This feature is used to store the Timer value at which point a call stream is selected by a Voting Repeater. The satellite receiver must be connected to a Voting Repeater via IP (either LAN or WAN). For the satellite receiver to operate correctly, this feature needs to know which voting repeater it is associate to. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
16776415	1	1

NOTICE:
The value specified by this field is the distance to the corresponding voting repeater slot boundary.

This feature is not editable when Operation Mode feature is set to Normal Repeater, Analog Satellite Receiver, or Digital Voting Repeater.

3.7.5.3 Digital Voting Stability Factor

This feature allows the user to set the Digital Voting Stability factor to a satellite receiver. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
5.0	0.5	0.5

NOTICE:
The default value of 0.5 only needs to be changed to a larger value when the timeslot swap occurs due to extreme environmental conditions (for example, congested network).

This feature is greyed-out when Operation Mode feature is set to Normal Repeater, Analog Satellite Receiver, or Digital Voting Repeater.

3.7.6
Audio Profile (General Settings)

The section explain the general settings of **Audio Profile**.

3.7.6.1
User Selectable Audio Profiles

User Selectable Audio Profiles (USAP) allows you to optimize the audio experience for specific environments.

You can select one environmental profile and one user preference profile at a given time. This feature is an RX-side feature. You can use audio preference profile to control an Rx-side filter. Audio Environment and audio Preference profile are both independent fields.

For Display models, you can select Environment or Preference through RM and Radio Menu. For Plain models, you can select Environment or Preference through RM only. This is a radio-wide feature and only available in Digital mode.

Interaction with Bluetooth

When bluetooth device is connected to the radio, Audio Ambience and Audio Profile menu on the radio are blocked and you are not allowed to access this feature. Audio profile and ambience will behave as default. For Plain models, you are able to select the audio ambience and audio profile and flash to radio. However, the audio profile and ambience will behave as default. Refer to the MOTOTRBO Experience #13: User Selectable Audio Profiles video to view the feature demonstration.

3.7.6.2
Intelligent Audio Response

The Intelligent Audio feature automatically adjusts the volume emitted from the radio speaker. This feature is supported in Digital mode only.

It depends on the noise in the surrounding environment, so that the radio transmission can be heard above the ambient noise. When this feature is enabled, the volume knob defines the volume floor (i.e the lowest allowable speaker volume level).

For system which utilizes the 13 W external speaker attached to a mobile radio, it may or may not be possible to place the external speaker for optimal performance of Intelligent Audio.

Disabled
Disables the Intelligent Audio Response feature. The audio volume will follow the volume knob position, but will not be automatically adjusted with ambient noise level.

Normal
The noise threshold of the intelligent audio follows the volume knob position. Once the ambient noise is above the noise threshold, the audio volume is boosted.

Refer to the MOTOTRBO Experience #1 Intelligent Audio video to view the feature demonstration.

3.7.6.3
Language

This field allows you to set the language for the audio profile.

The available selections are as follows:

- **Default**
- **Dutch**
- **Indonesian**
- **Italian**
- **Spanish**

3.7.6.4
Environment

This drop-down list allows the user to choose an audio ambience.

To use this feature, select the current environment profile for the working environment. Available choices are Default, Loud, and Work Group. For more information about USAP, refer to User Selectable Audio Profile.

Default
When this feature is set to Default, this feature is disabled. At the Rx side, when the user sets this feature as Default, the expected result is there are no difference on the audio heard. It is normal encode and decode activity.

Loud
When this feature is set to Loud, the receiver is in a high noise environment. The Noise Supressor is enabled (by default). Selecting this option boosts the Rx volume around 8dB.

Workgroup
When this feature is set to Workgroup, the receiver is in a Control Room. The AF Suppressor is enabled in the radio menu (the radio menu is disabled by default). Digital Mic AGC is disabled in the radio menu.

3.7.6.5
Preference

User preference profile allows you to optimize the receiving audio experience per user need.

The drop-down list allows you to choose the preferred audio profile. The audio profiles sound effects are distinctive from one another.

The available selections are as follows:

Default
Normal Tx and Rx audio is heard.

Level 1
DSP processes the audio with predefined filters for **Level 1**.

Level 2
DSP processes the audio with predefined filters for **Level 2**.

Level 3
DSP processes the audio with predefined filters for **Level 3**.

Treble Boost
DSP processes the audio with predefined filters for **Treble Boost**.

Mid Boost
DSP processes the audio with predefined filters for **Mid Boost**.

Bass Boost
DSP processes the audio with predefined filters for **Bass Boost**.

For more information on optimizing audio experience for specific environments refer to User Selectable Audio Profiles on page 240.

NOTICE:
For acoustic safety, **Max Extra Loud Accessories Volume Level Attenuation (dB)** should be configured according to the preference audio profile setting used.

3.7.6.6 AF Suppressor

The AF Suppressor feature enables the radio to automatically suppress howling in the received audio when detected.

This gives you a better audio experience in potential acoustic feedback environment. This feature can be toggled between on and off via a short or long programmable button press (Toggle AF Suppressor).

Refer to the MOTOTRBO Experience #2: Acoustic Feedback Suppressor video to view the feature demonstration.

3.7.6.7 Analog AF Suppressor

The Analog AF Suppressor feature enables the radio to automatically suppress howling in the received audio when detected. This feature is supported in Analog mode only.

3.7.6.8 Noise Suppressor

The Noise Suppressor feature enables the transmitting radio to automatically suppress noise on the microphone when detected.

This gives you a better audio experience by reducing unwanted ambient sounds. It is recommended to always have this feature enabled in the transmitting radio.

The following selections are supported:

Disabled
Disables the Noise Suppressor feature.

Basic
Basic noise suppression is applied. Available to all radios.

Enhanced Auto
Advanced noise suppression is applied dynamically. In quiet environments, the noise suppression is relaxed so that the audio is more natural sounding. In noisy environments, maximum noise suppression is applied.

NOTICE:
Languages that have guttural sound are impacted by noise suppression. To improve the audio quality, disable this feature.

In extremely noisy environments, noise suppressor may not effectively remove all ambient noise.

Maintaining a high S/N (speech to noise) ratio is important for the noise suppressor to be effective. You can achieve a good S/N by speaking loudly and clearly as well as by holding the radio or accessory microphone in a position that is recommended in the user manual.

3.7.6.9
Fast Noise Suppressor Training Period (sec)

The Noise Suppressor feature enables the transmitting radio to automatically suppress noise on the microphone when detected.

The following selections are supported:

- **Disabled** (This is the default value)
- **600 seconds**
- **300 seconds**
- **60 seconds**
- **30 seconds**
- **15 seconds**
- **10 seconds**
- **Continuous**

NOTICE:
This feature is hidden if the Noise Suppressor for single microphone (SINC+) is not purchased.

This setting is grayed out without the value reset in Radio Management (RM) 2.0 if the Noise Suppressor for SINC+ is purchased but Noise Suppressor field is disabled.

3.7.6.10
Trill Enhancement

This check box allows you to enable or disable Trill Enhancement.

Trill Enhancement improves the voice quality for languages that have an alveolar trill sound (also known as a 'Rolling R'). Some examples of such as languages include Spanish, Italian, Finnish, Catalan, Swedish, Hungarian, Polish, Czech, Basque, Lithuanian, Arabic, and Tamil, among others. It is not recommended to enable this feature for languages that do not have an alveolar trill sound (for example, English), because it may decrease voice quality for those languages.

Refer to the MOTOTRBO Experience #14: Trill Enhancement video to view the feature demonstration.

3.7.6.11
Analog RX Audio Leveling

Rx Audio Leveling (RAL) allows a radio user to have a better audio experience when the received digital audio level is soft or too loud.

It enables the radio to automatically control the active speech level in the received audio once detected on an Rx radio. When the Analog RX Audio Leveling is enabled, the user can use the Rx Audio Leveling on the analog channels.

NOTICE: This feature is supported in Analog mode only.

3.7.6.12
Digital RX Audio Leveling

Rx Audio Leveling (RAL) allows a radio user to have a better audio experience when the received digital audio level is soft or too loud.

It enables the radio to automatically control the active speech level in the received audio once detected on an Rx radio. When Digital RX Audio Leveling is enabled, the user can use the Rx Audio Leveling on the digital channels.

NOTICE: This feature is supported in Digital mode only.

3.7.7
Microphone (General Settings)

The section explain the general settings of **Microphone**.

3.7.7.1
Mic Selection Rule

This field allows you to configure Mic Selection Rule.

Mic Selection Rule defines the transmit audio routing behavior when an external microphone is connected to the Portable.

Default
When an external accessory is connected to the Portable, the external microphone is always turned on. When there is no external accessory connected to the Portable, the internal microphone is always turned on. Do NOT select this option with receive only accessories.

External PTT Only
When an external accessory is connected to the Portable, the external microphone is turned on when the external microphone PTT is pressed. However, the Portable PTT button is disabled. When there is no external accessory connected to the Portable, the internal microphone is always turned on. Do NOT select this option with receive only accessories.

NOTICE: This option is not applicable to some MOTOTRBO 1.0 radios operating in Connect Plus mode. Only the **Default** and **Mic Follow PTT** options are available.

Mic Follow PTT
When an external accessory is connected to the Portable, the microphone selection depends on the PTT press. The external microphone is turned on when the external microphone PTT is pressed. The internal microphone is turned on when the Portable PTT is pressed. When there is no external accessory connected to the Portable, the internal microphone is always turned on.

3.7.7.2
Mic Distortion Control

Allows the user to enable or disable the Mic Distortion Control feature.

NOTICE:
This feature is applicable in Digital mode only.

3.7.7.3
Analog Mic AGC

This field allows you to configure the transmitting radio's microphone gain automatically.

AGC stands for Automatic Gain Control and is used to suppress loud audio (maximum suppression of 12 dB) or boost soft audio (maximum boost of 6 dB) to a nominal value.

NOTICE:
Enabling this feature overrides the Analog Front Mic Gain feature.

It is recommended to turn this feature on.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode only for all radio types and 3600 Trunking capable radios for Portable only.

3.7.7.4
Analog Accessory Mic AGC

Controls the transmitting radio's rear microphone gain automatically.

AGC stands for Automatic Gain Control and is used to suppress loud audio (maximum suppression of 12 dB) or boost soft audio (maximum boost of 6 dB) to a nominal value.

NOTICE:
Enabling this feature overrides the Analog Accessory Mic Gain feature.

It is recommended to turn this feature on.

This feature is applicable to 3600 Trunking capable radios only.

3.7.7.5
Mic AGC

This field allows you to control the transmitting radio's microphone gain automatically.

The AGC (Automatic Gain Control) is intended to provide consistent level audio for a wide range of voice levels input. AGC is used to suppress loud audio (maximum suppression of 12 dB) or boost soft audio (maximum boost of 3 dB) to a nominal value.

When the AGC is disabled, soft spoken users sound very soft to the receiving radios and naturally loud spoken users may be undesirably loud.

NOTICE:
Enabling this feature overrides all the Analog or Digital Mic Gain feature

It is recommended to turn Mic AGC feature on.

On VOX-enabled channels, disabling Mic AGC and adjusting the Accessory Mic Gain (dB) (Portable) affects VOX Sensitivity.

3.7.7.6
Analog Mic Gain (dB)

This field defines the amplification of the Portable's microphone.

The audio level of the transmitting radio will be amplified by the following values. However, receiver can still adjust the speaker level. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
20 dB	-20 dB	1 dB

Range:

Maximum	Minimum	Increment
31 dB or 20 dB	0 dB or -20 dB	1 dB

Range:

Maximum	Minimum	Increment
20 dB	-18 dB	1 dB

NOTICE:
Depending on the MOTOTRBO 2.0 portable radio model, the maximum value for Analog Mic Gain (dB) can be 31 or 20.

Depending on the MOTOTRBO 2.0 portable radio model, the minimum value for Analog Mic Gain (dB) can be 0 or -20.

When configuring the mic gain for MOTOTRBO Conventional radios' Intelligent Audio, the workable range is +/-3dB of default mic gain.

If the mic gain is set higher than 3dB of default mic gain, the speaker volume is higher than normal.

If mic gain is set lower than 3dB of default mic gain, the speaker volume is lower than normal.

If the mic gain is low enough (20 dB lower than default mic gain), the volume does not increase even if middle noise environment (98dB spl).

This gain value has no effect after the user enables the Analog Mic AGC feature.

3.7.7.7

Digital Mic Gain (dB)

This field defines the amplification of the Portable's microphone.

The audio level of the transmitting radio will be amplified by the following values. However, receiver can still adjust the speaker level. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
20 dB	-20 dB	1 dB

Range:

Maximum	Minimum	Increment
31 dB or 20 dB	0 dB or -20 dB	1 dB

Range:

Maximum	Minimum	Increment
20 dB	-18 dB	1 dB

NOTICE:
Depending on the MOTOTRBO 2.0 portable radio model, the maximum Digital Mic Gain (dB) can be 31 or 20.

Depending on the MOTOTRBO 2.0 portable radio model, the minimum value for Digital Mic Gain (dB) can be 0 or -20.

This gain value has no effect and resets to the default value after the user enables the Digital Mic AGC feature.

When configuring the mic gain for MOTOTRBO Conventional radios' Intelligent Audio, the workable range is +/-3dB of default mic gain.

If the mic gain is set higher than 3dB of default mic gain, the speaker volume is higher than normal.

If mic gain is set lower than 3dB of default mic gain, the speaker volume is lower than normal

If the mic gain is low enough (20 dB lower than default mic gain), the volume does not increase even if middle noise environment (98dB spl).

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.7.7.8 VOX Sensitivity

This field allows you to adjust the VOX sensitivity level.

Of the six available levels, Level 1 is the most sensitive level, while level 6 is the least sensitive level. VOX sensitivity should be configured properly to avoid situations where VOX is frequently triggered unintentionally or where it is difficult to trigger VOX. Several factors should be considered when configuring this feature, such as the type of accessory used, the environment in which the radio performs, the radio user's regular speech volume, etc. Depending on the environment in which the radio is used, the VOX sensitivity level needs to be adjusted for optimal performance. Level 2 is recommended for most accessories. It is recommended that the VOX sensitivity for Lightweight D-Style Earsets be set to Level 3 for quiet environments and Level 5 for noisy environments. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
Level 6	Level 1	1

3.7.7.9 Hot Mic Source

The Hot Microphone (Hot Mic) feature causes the radio to key up automatically for a predetermined amount of time during Remote Monitor and Emergency Alarm followed by Voice.

The Hot Mic Source feature identifies which microphone should become active (hot) during this predetermined transmission period.

Rear Accessory
Radio uses the rear accessory microphone as the source of audio for the duration of the Hot Microphone (applicable to Mobile configuration only).

Front Accessory
Radio uses the front accessory microphone as the source of audio for the duration of the Hot Microphone (applicable to Mobile configuration only).

Accessory
Hot Mic feature uses the attached accessory microphone (portable radio).

Internal
Hot Mic feature uses the internal microphone (portable radio).

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Digital mode and 3600 Trunking capable radios in Analog mode..

3.7.8
Back Light (General Settings)

The **Back Light** section of the General set contains the following fields:

3.7.8.1
On Receiving Over-the-Air Event

This check box allows the user to enable or disable the On Receiving Over-the-Air Event feature.

When the user enables this check box, the backlight automatically turns on when the radio receives a voice call alert, text message, job ticket, missed call, or emergency alarm. When the user disables this check box, the backlight does not turn on automatically in those cases, but may still be turned on in other ways.

3.7.8.2
On User Event

This check box allows the user to enable or disable the On User Event feature.

When the user enables this check box, the backlight automatically turns on when the user changes the channel, volume, or press a keypad or programmable button on the radio. When the user disables this check box, the backlight does not turn on automatically in those cases, but may still be turned on in other ways.

3.7.8.3
Timeout Timer (Sec)

This drop-down list allows the user to choose the amount of time that the backlight remains on before being automatically turned off.

Choices are Infinity (∞), 5, 10, 15, 20, 25, 30, 40, 50, and 60 seconds.

3.7.9
Emergency (General Settings)

The **Emergency** section of the General set contains the following fields:

3.7.9.1
Alarm Type

Specifies the behavior of the radio's alarm when the emergency button is pressed.

Regular
The radio transmits an alarm signal and provides audio and visual indication that it is in Emergency mode.

Silent
The radio transmits an alarm signal but gives no audio or visual indication that it is in Emergency mode. In addition, it will not unmute to any received audio.

Silent w/ Voice
The radio transmits an alarm signal but gives no audio or visual indication that it is in Emergency mode. The radio then unmutes to qualified channel activity.

NOTICE:
This feature is applicable to 3600 Trunking capable radios only.

3.7.9.2
Alarm RX Indication

Determines if audio and visual indication is given by the radio when an emergency alarm is received.

If disabled, the radio displays nothing when it receives an emergency alarm.

NOTICE:
This feature is applicable to 3600 Trunking capable radios for Display model only.

3.7.9.3
Call RX Indication

Determines if a visual indication is given by the radio when an emergency call is received.

NOTICE:
This feature is applicable to 3600 Trunking capable radios for Display model only.

3.7.10
Battery Saver (General Settings)

The **Battery Saver** section of the General set contains the following fields:

3.7.10.1
Preamble

This feature enables or disables the battery saver preamble.

The radio sends a preamble before each transmission to enhance the ability of receiving radios in battery saver mode to synchronize in preparation for transmissions; reducing the occurrence of late-entry. To avoid interoperability issues, it is recommended that all radios in a system share the same setting for this field. The value of this field does not affect Capacity Plus–Single-Site channels. This is a radio-wide feature.

NOTICE: The Receive feature is disabled if this feature is disabled (unchecked).

3.7.10.2
Receive

Enabling this feature causes an idle radio to automatically enter battery saver mode where it places certain radio functions on standby.

After a certain duration or when there is any user button action, the radio returns to normal operation and checks the channel for incoming calls. If no calls are detected, it returns to the battery saver mode.

While results vary across battery chemistry and user conditions, battery saver can deliver about a 10% improvement in battery life, but also causes a delay in response time. When this feature is enabled, it is important to note that for the transmitting radios, there will be a slight delay in call setup (in the range of milliseconds) when pressing the Push-to-Talk (PTT) button. For the receiving radios, there may be an increase in late entry due to radios in battery saver mode having less opportunity to properly synchronize. This may cause the radios to miss the initial second of some audio transmissions in poor radio frequency (RF) conditions. This, however, will not be experienced in good RF coverage. Although they are important to note, these delays are considered minor versus the 10% improved battery life, therefore it is recommended to enable battery saver mode for all radios. This is a radio-wide feature.

NOTICE:
This feature is disabled if Preamble is disabled (unchecked).

This feature is disabled if Option Board Trunking is enabled (checked).

3.7.10.3
Backlight (Battery Saver)

When enabled, the Portable screen will not be displayed in any receive operation (incoming call) until any user operation is invoked (key press).

This is to save the battery energy.

NOTICE:
This feature only applies when an audio accessory (wired or Bluetooth) is attached.

This feature is exited when an emergency call or alarm is triggered.

This feature is supported in Digital mode only.

This feature is applicable to SL Series radios.

3.7.11
Alerts (General Settings)

The **Alerts** section of the General set contains the following fields:

3.7.11.1
Disable All Tones

Allows the user to disable all alert tones (Keypad tones, Call Ringers, Escalert, Talk Permit Tone and Channel Free Indication) except for the incoming Emergency alert tone.

This feature can be toggled on/off via a short or long programmable button press (All Alert Tones On/Off) or Tones/Alerts (Utilities Menu) feature. This is a radio-wide feature.

3.7.11.2
Talk Permit Tone (3600 Trunking capable radios — Conventional Channel)

This alert tone sounds after the Push-to-Talk (PTT) button is pressed and the radio is able to transmit on the channel.

This is to prompt the user to begin speaking. This is a radio-wide feature.

NOTICE:
The Disable All Tones feature must be disabled.

This feature is applicable to 3600 Trunking capable radios in Conventional mode only.

3.7.11.3
Escalert Tone

The radio gradually increases the volume of a repetitive alert tone (for example, a repetitive tone on an incoming call).

The alert tone volume starts from a predefined minimum volume in the radio and increases, by a constant step size, until the volume level reaches the maximum volume. This is a radio-wide feature.

NOTICE:
The Disable All Tones feature must be disabled.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only and 3600 Trunking capable radios only.

For MOTOTRBO Conventional radios, this feature is available only when the Digital feature is enabled in the device.

3.7.11.4
Channel Free Indication Tone

This feature sounds an alert tone when a voice call ends.

It also sounds when the voice call is interrupted on the current channel, for example, by interruptions caused by a third radio making an impolite call or sending an emergency alarm. However, this tone does not sound if the interruption is caused by a corrupted radio signal. Voice calls include Group Call, Private Call, All Call, and Emergency Call. A voice call ends when the user of the calling radio releases the Push-To-Talk (PTT) button, regardless of hang time. This feature alerts the receiving radio that the channel is available for him/her to respond producing a smoother flow of conversation. This alert tone does not sound at the end of a Remote Monitor transmission, or during Priority Scan when the voice call ends while the radio is sampling the priority channel(s). This is a radio-wide feature.

NOTICE:
The Disable All Tones feature must be disabled.

This feature is supported in Digital mode only.

3.7.11.5
Self Test Pass Tone

Allows the user to enable or disable Self Test Pass Alert Tone.

This is the tone that the radio sounds after it is successfully powered up. This is a radio-wide feature.

3.7.11.6
Prohibit Tone On Interrupt

This check box allows the user to change the behavior when a call is pre-empted by a priority transmission.

If this field is disabled, the prohibit tone will not be played and the transmission will be played immediately without waiting for the receiver to release the Push-to-Talk button.

3.7.11.7
Block Pending Private Calls

When enabled and the radio receives multiple Call Alerts or Private Calls, the first Call Alert or Private Call received by the radio shall be displayed to the user.

Successive Call Alerts or Private Calls shall be ignored unless the source information of the call is identical to the first Call Alert or Private Call received by the radio. This is a radio-wide feature.

NOTICE:
This feature is applicable to 3600 Trunking capable radios only.

3.7.11.8 Talk Permit Tone

This alert tone sounds after the Push-to-Talk (PTT) button is pressed and the radio is able to transmit on the channel.

This is to prompt the user to begin speaking. This is a radio-wide feature.

Analog
This alert tone is enabled only for analog channels.

Digital
This alert tone is enabled only for digital channels.

Analog & Digital
This alert tone is enabled for both analog and digital channels.

None
This alert tone is disabled for both analog and digital channels.

NOTICE:
The Disable All Tones feature must be disabled.

It is recommended to disable this feature when VOX is being used.

Disabling this feature for analog channels does not disable other tones, i.e. PTT Sidetone on MDC systems will still be heard by the user.

3.7.11.9 Volume Offset (dB)

Sets an offset level for the alert tone volume.

Setting this causes the alert tone volume level to be constantly higher, lower, or equal to the audio volume level controlled by the radio's volume knob. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
25 dB	-25 dB	1 dB

3.7.11.10 Out of Range Indication

Selects the Out of Range Indicator from the available choices.

An alert (audible and/or visual) is provided to the user when the radio detects it is out of range. This is a radio-wide feature.

No Indication
No audible or visual alert will be provided to the user when the radio detects out or range.

Display Only
A visual indication will be provided to the user when the radio detects out or range (applicable to Display model only).

Alert Only
An audible alert will be provided to the user when the radio detects out of range.

Display & Alert
An audible and visual indication will be provided to the user when the radio detects out of range (applicable to Display model only).

NOTICE:
The Alert Only and Display & Alert options are only available when the Disable All Tones feature is disabled (i.e. not checked).

This feature is applicable to 3600 Trunking capable radios only.

3.7.11.11
Imbalanced Coverage Indication

Selects the Imbalanced Coverage Indicator from the available choices.

An alert (audible and/or visual) is provided to the user when the radio detects an imbalanced coverage condition. This is a radio-wide feature.

No Indication
No audible or visual alert will be provided to the user when the radio detects a coverage imbalance condition.

Display Only
A visual indication will be provided to the user when the radio detects a coverage imbalance condition (applicable to Display model only).

Alert Only
An audible alert will be provided to the user when the radio detects a coverage imbalance condition.

Display & Alert
An audible and visual indication will be provided to the user when the radio detects a coverage imbalance condition. (applicable to Display model only).

NOTICE:
The Alert Only and Display & Alert options are only available when the Disable All Tones feature is disabled (i.e. not checked).

This feature is applicable to 3600 Trunking capable radios only.

3.7.11.12
Fixed Volume

When enabled, this feature causes the Alert Tones to play at half the full rated volume, regardless of the volume knob position.

Use the Volume Offset (dB) option to apply additional offsets.

3.7.11.13
RX Low Battery Interval (sec)

The Receive (RX) Low Battery tone is an alert tone that sounds when the radio's low battery threshold is reached while a call is being received, or while the radio is in idle mode.

The RX Low Battery Interval sets the interval for the generation of this tone. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
635 sec	0 sec	5 sec

NOTICE:
This feature is disabled if the duration is set to 0.

3.7.11.14
Emergency Search Tone

This check box allows the user to enable or disable the Emergency Search Tone.

When enabled, the radio emits a loud and distinct tone that allows other people to locate the person holding the radio. When enabled, the radio is able to specify the route of the Emergency Search Tone/ incoming voice; whether to the internal speaker or the accessory speaker.

When the user enables the Emergency Search Tone and the Emergency Alarm is activated, the radio emits a loud and distinct tone that allows other people to locate the person holding the radio. After the Emergency Alarm is sent successfully, the Emergency Search Tone will stop.

When the user enables the Emergency Search Tone and the Emergency Alarm with Call is activated, the Emergency Search Tone will continue because the radio is still in an emergency state.

If this feature is not enabled, this routing option will not take effect by the radio and the emergency initiating subscriber will follow all the legacy emergency ergonomics indications.

NOTICE:

- This feature is supported in Direct Mode, Talkaround mode, 6.25e direct mode, and repeater mode in Conventional Single Site, IP Site Connect, Capacity Plus–Single-Site, and Capacity Plus–Multi-Site.
- This feature is hidden when the user disables the Digital feature.

3.7.11.15
Emergency Search Tone Volume

This field allows the user to choose the volume of the Emergency Search Tone.

Range	
Maximum	10
Minimum	1
Increment	1

NOTICE:

- This feature is hidden when the user disables the Digital feature.

3.7.11.16
Emergency Search Tone Speaker

This drop-down list allows the user to choose whether to use the internal speaker (Radio) or the external speaker (Accessory) to play the Emergency Search Tone.

Select "Radio" if the user wants the internal speaker to play the Emergency Search Tone. Select "Accessory" if the user wants the external speaker to play the Emergency Search Tone. If the user selects "Accessory", but there are no accessories attached, the radio ignores the RM configuration and plays out the tone/incoming voice to the internal speaker. The external speaker can be a Bluetooth speaker or another type of external speaker. When the search tone speaker is set to "Accessory" and

there is more than one accessory speaker connected, the radio simply follows the existing priority rules among these different accessory speakers to route the search/incoming voice to the external speaker with the highest priority.

NOTICE:

- This feature is supported in Direct Mode, Talkaround mode, 6.25e direct mode, and repeater mode in Conventional Single Site, IP Site Connect, Capacity Plus–Single-Site, and Capacity Plus–Multi-Site.
- This feature is hidden when the user disables the Digital feature.
- This feature is only applicable when the Emergency Search Tone is enabled.

3.7.11.17 Emergency Alert Tone Duration (min)

This spin edit allows the user to choose the sound duration of the Emergency Alert Tone before this tone is automatically silenced.

NOTICE:

- This feature is hidden when the user disables the Digital feature.
- This feature is applicable for MOTOTRBO 2.0 radios only.

3.7.11.18 Call Alert Tone Duration (sec)

Configures the call alert tone sound duration for the radio decoding of the digital/MDC/QCII selective call alert.

This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
∞ sec	5 sec	5 sec

NOTICE:
The Disable All Tones feature must be disabled.

If the Infinity (∞) option is selected, the call alert tone will continuously sound until the user cancels the call alert indication. For the 3- and 4- button radio models, user must not select the Infinity (∞) because the front buttons of the 3 and 4-button radio models cannot cancel the call alert indication.

3.7.11.19 Text Message Alert Tone Duration (min)

Sets the duration the alert tone is played when the Text Message Alert Tone (Digital Call) or Text Message Alert Tone (Capacity Plus–Single-Site) is set to Repetitive. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
∞ min	1 min	1 min

NOTICE:
The Disable All Tones feature must be disabled.

If the Infinity(∞) option is selected, the text message alert tone will continuously sound until the user cancels the alert indication. For the 3- and 4- button radio models, user must not select the Infinity (∞) because the front buttons of the 3 and 4-button radio models cannot cancel the call alert indication.

This feature is supported in Digital mode only.

3.7.11.20
ARTS Tone

Indicates whether the radio sounds audible indications when a valid transmission is received.

Disabled
The radio does not sound audible indications when a valid transmission is received.

Once
The radio sounds audible indications when range status changes.

Always
The radio sounds audible indications when range status changes or radio, which is in range, receives valid transmissions.

NOTICE:
This feature is disabled when Disable All Tones is enabled.

This feature is supported in Analog mode only.

3.7.11.21
Visual Indication

Displays the ARTS visual indications when range status changes or the radio is out of range.

If disabled, the radio does not display any visual indications.

NOTICE:
This feature is supported in Analog mode only.

3.7.11.22
Clear Call Received

Enable this check box to use the clear call receive tone on an encrypted channel.

3.7.11.23
Channel Knob Tone

This alert tone indicates that the knob has successfully changed the channel.

NOTICE:
This feature is disabled if the Disable All Tones is enabled.

3.7.12
Persistent LRRP Requests (General Settings)

The **Persistent LRRP Requests** section of the General set contains the following fields:

3.7.12.1
Save

This field allows the user to enable or disable the Save Persistent LRRP (Location Request and Response Protocol) Requests.

When enabled, all persistent LRRP requests are kept in the radio's memory. This is a radio-wide feature.

NOTICE:
This feature is also available for GNSS model.

3.7.12.2
Delete

This field allows the user to enable or disable the Delete Persistent LRRP (Location Request and Response Protocol) Requests.

When enabled, all persistent LRRP requests are cleared from the radio's memory, and the radio will only transmit location updates upon receiving the next persistent LRRP request. Otherwise, all the saved LRRP requests in the radio are preserved. This is a radio-wide feature.

NOTICE:
This feature is also available for GNSS model.

3.7.13
Lone Worker (General Settings)

The **Lone Worker** section of the General set contains the following fields:

3.7.13.1
Response Timer (min)

This timer is part of the Lone Worker feature.

It determines how long the radio waits since the last user activity before it begins sending reminders. User activity is defined as activation of any radio button, or activation of the channel selector. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
255 min	1 min	1 min

3.7.13.2
Reminder Timer (sec)

This timer is part of the Lone Worker feature.

It determines how long the radio waits since the Response Time has expired before raising the emergency. User activity is defined as activation of any radio button, or activation of the channel selector. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
255 sec	1 sec	1 sec

3.7.13.3
Smart PTT Periodic Time (sec)

Specifies the time interval that telegrams will be sent when the PTT Keyup Mode feature is set to Smart PTT.

Range:

Maximum	Minimum	Increment
60 sec	20 sec	5 sec

NOTICE:
This feature is supported in Analog mode only.

3.7.13.4
Carrier Gone Timer (sec)

Specifies the duration that the radio is not allowed to transmit after carrier is gone.

This feature is used to prevent operators currently not involved in calls from transmitting over other users who may be active on the channel, but are de-keyed with their auto-reset timers running.

Range:

Maximum	Minimum	Increment
60 sec	0 sec	1 sec

NOTICE:
This feature is supported in Analog mode only.

3.7.14
Power Up (General Settings)

The **Power Up** section of the General set contains the following fields:

3.7.14.1
MDC Status

When enabled, upon powering up, the radio automatically displays the Status list menu and the selected entry is the last status acknowledged.

Else, the radio displays the home screen after powering up.

NOTICE:
This feature is supported in Analog mode only.

3.7.14.2
Desired Channel Zone

Allows the user to configure a desired power up channel.

3.7.14.3
Desired Channel

Specifies the channel that the radio will power up on.

The choices are Last Selected Channel and all available channels. If the Last Selected Channel option is selected, the radio will always power up on the last used channel prior to power down.

NOTICE:
The value of this feature is set to the Last Selected Channel if the selected channel is deleted or the pasted value does not exist in the available choices.

3.7.15
Password and Lock (General Settings)

The **Password and Lock** section of the General set contains the following fields:

3.7.15.1
Enable (Password and Lock)

Allows the user to enable or disable the Password and Lock feature.

This feature protects the radio from unauthorized usage via a password. When enabled, the user is prompted to enter a password at radio power up. The radio will be locked for 15 minutes if three incorrect passwords are entered consecutively. After 15 minutes, the user will be prompted to enter the password again. The radio will remain locked until the correct password is entered. This is a radio-wide feature.

3.7.15.2
Password

Sets the password that the user must enter in order to use the radio functionality when the Password and Lock Enable feature is enabled.

The length of the password must be 4 characters long. The first character in the password must be a number between 0 to 9. The range for the subsequent digits is 0 to 9 for Mobile and Portable Display models. For Non-Display portable models, the user must still input the first password character (between 0 to 9) via the channel knob position, but the user must input the subsequent password characters via the side buttons (between 1 to 3). For 3- and 4-button portable radio models, the user must input all passwords via the side buttons (between 1 to 3). In general, the password range depends on the number of side buttons available on the radio. For example, if there are 3 side buttons in the portable radio model, the length of the password is 1 to 3 characters long. If there are 2 side buttons in the portable radio model, the length of the password is 1 to 2 characters long. This is a radio-wide feature.

NOTICE:
This feature is available when the Enable feature is checked.

This feature filters any invalid characters and if it still has more characters than the maximum, it truncates to the maximum length allowed.

3.7.16
Front Programming Password (General Settings)

The **Front Programming Password** section of the General Settings set contains the following fields:

3.7.16.1
Mode

Configures the level of access for the Front Panel Programming (FPP) operation.

The FPP feature lets the user change certain codeplug settings directly from the radio when the RM is not available, e.g. when the user is on the field.

Disabled

The Front Panel Programming feature is disabled. Under this setting certain features are disabled (see Note) or assigned to a radio programmable button.

User

The user can access all options in the Menu tree as well as options assigned to the radio programmable buttons.

Dealer

The user can access the menu options from the radio once the Front Panel Programming password in entered.

NOTICE:
Features disabled when Mode Option is set to **Disabled** and features enabled when Mode option is set to **User**:

- Scrambling
- Enable/Disable Power Up Tone
- Enable/Disable VOX
- Scan–Add Scan List Member
- Scan – Delete Scan List Member
- Scan – Set / Clear Priority 1.2
- Scan – Scan List Selection
- Alert Tones – Volume
- Alert Tones – Disable / Enable All Tones
- Alert Tones – Disable / Enable Talk Permit Tone
- Alert Tones – Disable / Enable Escalert
- Alert Tones – Disable / Enable Keypad Tones
- Alert Tones – Set Call Ringer per Call Type
- Toggle LED Indicators
- Backlight
- RF Power Level
- Menu Timer
- Disable / Enable Introduction Screen
- Toggle Repeater, Talk Around Mode
- Language Selection
- Analog Mic AGC
- Digital Mic AGC
- Squelch Level
- Digital UCL – Add Contact
- Digital UCL – Update Contact
- Flexible RX List

Additional features available for edit when Mode Option is set to "Dealer" once the Front Panel Programming password is entered:

- Mic Gain
- Signaling Systems
- Edit Zone
- Edit Channel
- Radio button
- Accessories button

3.7.16.2
Password

Prevents unauthorized access to programming the “Protected" codeplug parameters in Dealer Mode.

The user enters this password when accessing the “Protected" codeplug parameters. This password must always be exactly eight characters and cannot be empty. This password is not configurable from the radio and can only be changed from Radio Management .

NOTICE:
This feature is enabled if the Mode feature is set to Dealer.

This feature value is set to the original value when the changes that is committed is blank or invalid, i.e. the user only inputs one digit and then tabs out to commit the changes.

This feature filters any invalid characters, e.g. if the user tries to copy "101 12 1aa3bg4", it will be pasted as "10112134".

3.7.17
Delete All (General Settings)

The **Delete All** section of the General set contains the following fields:

3.7.17.1
Text Messages

The feature allows you to configure the radio to delete all Text Messages.

NOTICE:
This feature is hidden when the Digital feature is disabled.

3.7.17.2
Job Tickets

Allows the user to set the radio to delete all job tickets.

NOTICE:
This feature is supported in Digital mode only.

3.7.17.3
Call Log

This field allows the user to set the radio to delete all items in the call log items.

3.7.17.4
User Contacts

This field allows you to set the radio to delete all user contacts.

3.7.18
Rental Timer (General Settings)

Rental Timer feature allows the user to automatically disable a radio beyond the specified period on the timer.

The **Rental Timer** section of the General set contains the following fields:

3.7.18.1

Rental Period (Hours)

The Rental Period feature allows the user to set a desired rental timer in the radio. At the end of the expiry, the radio ceases to function until the dealer performs normal write operation with the Radio Management (RM) to reset the rental timer.

Table 42: Range

Maximum	Minimum	Increment
999 hr	0 hr	1 hr

3.7.18.2

Rental Extension Time (Hours)

The Rental Extension Time feature allows the user to program a configurable extension period of up to 99 hours.

Table 43: Range

Maximum	Minimum	Increment
99 hr	0 hr	1 hr

The user can trigger the extension period through a specific keypad sequence on the radio.

NOTICE: Each radio is permitted with only one extension.

3.7.18.3

Rental Expiry Reminder (Hours)

Rental Expiry Reminder feature allows the user to set a reminder when the rental timer is about to expire. The radio provides an audio reminder of the timer expiry. This feature triggers the reminder 9 hours before expiry and hourly reminder.

Table 44: Range

Maximum	Minimum	Increment
9 hr	0 hr	1 hr

3.7.18.4

Rental Extension Status

This feature displays whether the user requested for rental extension.

If rental extension was requested, the status displays as `Yes`. Otherwise, the status displays as `No`. The extension status is displayed in the Radio Management (RM) after the read operation.

3.7.19

5 Tone Radio ID (General Settings)

The **5 Tone Radio ID** section of the General set contains the following fields:

3.7.19.1
U1

Configures the first digit of the 5 Tone Radio ID variable. Valid digits are 0-9, A-F.

NOTICE:
This feature must not be empty.

This feature is supported in Analog mode only.

3.7.19.2
U2

Configures the second digit of the 5 Tone Radio ID variable. Valid digits are 0-9, A-F.

NOTICE:
This feature is enabled when the U1 feature is set to a value.

This feature is supported in Analog mode only.

3.7.19.3
U3

Configures the third digit of the 5 Tone Radio ID variable. Valid digits are 0-9, A-F.

NOTICE:
This feature is enabled when the U2 feature is set to a value.

This feature is supported in Analog mode only.

3.7.19.4
U4

Configures the fourth digit of the 5 Tone Radio ID variable. Valid digits are 0-9, A-F.

NOTICE:
This feature is enabled when the U3 feature is set to a value.

This feature is supported in Analog mode only.

3.7.19.5
U5

Configures the fifth digit of the 5 Tone Radio ID variable. Valid digits are 0-9, A-F.

NOTICE:
This feature is enabled when the U4 feature is set to a value.

This feature is supported in Analog mode only.

3.7.19.6
U6

Configures the sixth digit of the 5 Tone Radio ID variable. Valid digits are 0-9, A-F.

NOTICE:
This feature is enabled when the U5 feature is set to a value.

This feature is supported in Analog mode only.

3.7.19.7
U7

Configures the seventh digit of the 5 Tone Radio ID variable. Valid digits are 0-9, A-F.

NOTICE:
This feature is enabled when the U6 feature is set to a value.

This feature is supported in Analog mode only.

3.7.19.8
U8

Configures the eight digit of the 5 Tone Radio ID variable. Valid digits are 0-9, A-F.

NOTICE:
This feature is enabled when the U7 feature is set to a value.

This feature is supported in Analog mode only.

3.8
Accessories Set

The **Accessories** set contains features related to the connector (GPIO pins) on portable or mobile radios.

The following sections contain all the supported fields:

3.8.1
General (Accessories)

The **General** section of the Accessories set contains the following fields:

3.8.1.1
Hook Type

Defines the interaction between the Auto Reset Timer and hook state change for the Mobile.

This field allows the user to take manual control of the radio when on channel, but not actively making or receiving a call. Specifically, it takes the radio into auto-reset squelch mode and overrides the auto-reset timer.

Disabled
The Hook feature is completely inactive.

Timed
The Auto Reset Timer will be started when the radio goes Off Hook (Used when the microphone is left Off Hook, e.g. on the seat beside them.)

Permanent
The Auto Reset Timer is disabled while the radio is Off Hook.

NOTICE:
This feature is supported in Analog mode only.

3.8.1.2
Volume Control

If enabled, allows the volume to be controlled from both the radio and the IMPRES™ accessory (if the IMPRES accessory is attached to the radio).

Otherwise, volume is controlled only from the accessory, if the accessory supports volume control. This is a radio-wide feature.

3.8.1.3
Ignition Sense

Allows the Mobile to sense the car ignition status for the radio's power On/Off control.

This can prevent the vehicle's battery from being discharged due to possible continuous use of the radio when the engine is not running. This is a radio-wide feature.

Disable Ignition Off
The radio powers on by following the ignition sense or power button. The radio will power off by power button or Ignition Sense Auto Power Down Timer (min).

Follow Ignition Only
The radio powers on or off by following the ignition sense on/off. The radio’s power button will be ignored.

On/Off Or Ignition
The radio powers on or off by following either the power On/Off button or ignition sense.

PTT Disabled
Loss of ignition sense disables the radio's Push-to-Talk (PTT) button.

Disable Ignition Off
The radio powers on by following the ignition sense or power button. The radio will power off only by power button.

Follow Ignition Only
The radio powers on or off by following the ignition sense on/off. The radio’s power button will be ignored.

On/Off Or Ignition
The radio powers on or off by following either the power On/Off button or ignition sense.

TX Inhibit
Activates the TX Inhibit feature when the radio senses that the ignition is off. The TX Inhibit feature prevents the radio from transmitting.

3.8.1.4
Ignition Sense Auto Power Down Timer (min)

Sets the amount of minutes that the radio waits before automatically powering off. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
840 min	-0 min	1 min

3.8.1.5
Handset

Allows the user to communicate via a telephone-style handset connected to a radio's accessory port.

When the handset is lifted (i.e. 'off hook'), the radio routes the received audio to the handset. Audio can only be heard through the handset until it is placed back on the cradle. This is a radio-wide feature.

NOTICE:
This feature is not applicable to Trunking 3600, MOTOTRBO conventional radios and MOTOTRBO 2.0 radios.

3.8.1.6

Analog Accessory Mic Gain (dB)

Defines the amplification of the accessory microphone of a Portable.

The audio level of the transmitting radio will be amplified by this value. The user on the receiving radio can still adjust the speaker level. This is a radio-wide feature.

MOTOTRBO Conventional Range:

Maximum	Minimum	Increment
45 dB	-30 dB	1 dB

MOTOTRBO 2.0 Range:

Maximum	Minimum	Increment
31 dB or 45 dB	0 dB or -24 dB	1 dB

MOTOTRBO Light Range:

Maximum	Minimum	Increment
20 dB	-18 dB	1 dB

NOTICE:
Depending on the MOTOTRBO 2.0 portable radio model, the maximum value for Analog Accessory Mic Gain (dB) can be 31 or 45.

Depending on the MOTOTRBO 2.0 portable radio model, the minimum value for Analog Accessory Mic Gain (dB) can be 0 or -24.

This feature is disabled and resets to the default value after the user enables Analog Mic AGC.

When configuring the mic gain for MOTOTRBO Conventional radios' Intelligent Audio, the workable range is +/-3dB of default mic gain. If the mic gain is set higher than 3dB of default mic gain, user will notice that the speaker volume is higher than normal. If mic gain is set lower than 3dB of default mic gain, user will notice the speaker volume is lower than normal, and if the mic gain is low enough (20 dB lower than default mic gain), user will notice the volume does not increase even if middle noise environment (98dB spl).

For MOTOTRBO Conventional radios, the effective VOX Sensitivity level increases with higher Analog Accessory Mic Gain values and decreases with lower Analog Accessory Mic Gain values.

This feature is supported in Analog Mode only.

3.8.1.7

Digital Accessory Mic Gain (dB)

Defines the amplification of the accessory microphone of a Portable.

The audio level of the transmitting radio will be amplified by this value. The user on the receiving radio can still adjust the speaker level. This is a radio-wide feature.

MOTOTRBO Range:

Maximum	Minimum	Increment
45 dB	-30 dB	1 dB

MOTOTRBO 2.0 Range:

Maximum	Minimum	Increment
31 dB or 45 dB	0 dB or -24 dB	1 dB

MOTOTRBO Light Range:

Maximum	Minimum	Increment
20 dB	-18 dB	1 dB

NOTICE:
Depending on the MOTOTRBO 2.0 portable radio model, the maximum value for Digital Accessory Mic Gain (dB) can be 31 or 45.

Depending on the MOTOTRBO 2.0 portable radio model, the minimum value for Digital Accessory Mic Gain (dB) can be 0 or -24.

This feature is disabled and resets to the default value after the user enables Digital Mic AGC.

When configuring the mic gain for MOTOTRBO Conventional radios' Intelligent Audio, the workable range is +/-3dB of default mic gain. If the mic gain is set higher than 3dB of default mic gain, user will notice that the speaker volume is higher than normal. If mic gain is set lower than 3dB of default mic gain, user will notice the speaker volume is lower than normal, and if the mic gain is low enough (20 dB lower than default mic gain), user will notice the volume does not increase even if middle noise environment (98dB spl).

The effective VOX Sensitivity level increases with higher Digital Accessory Mic Gain values and decreases with lower Digital Accessory Mic Gain values.

This feature is supported in Digital mode only.

3.8.1.8

Max Extra Loud Accessories Volume Level Attenuation (db)

This drop-down list allows you to configure the maximum volume when accessory is attached. Maximum audio level of the receiving radio will be reduced by the value of **Max Extra Loud Accessories Volume Level Attenuation (db)**.

Table 45: Range

Maximum	Minimum	Increment
0 db	-20 db	1 db

Acoustic Safety

Exposure to loud noises from any source for extended periods of time may temporarily or permanently affect your hearing. The louder the radio’s volume, the less time is required before your hearing could be affected. Hearing damage from loud noise is sometimes undetectable at first and can have a cumulative effect.

To protect your hearing:

- Use the lowest volume necessary to do your job.
- Turn up the volume only if you are in noisy surroundings.
- Turn down the volume before adding headset or earpiece.
- Limit the amount of time you use headsets or earpiece at high volume.
- When using the radio without a headset or earpiece, DO NOT place the radio’s speaker directly to your ear.

- If you experience hearing discomfort, ringing in your ears, or muffled speech, you should stop listening to the radio through headset or earpiece and have your hearing checked by your doctor.

Accessories Recommended Configuration

Refer to Audio Preference setting and set Max Extra Loud Accessories Volume Level Attenuation according to the following table.

Accessories		Max Extra Loud Accessories Volume Level Attenuation (db)	
		Audio Preference (Default)	Audio Preference (Others)
PMLN8082A	1-Wire xL Clear Tube Earpiece, GCAI Mini	Less than -7 dB	Less than -20 dB
PMLN8083A	2-Wire xL Clear Tube Earpiece, GCAI Mini	Less than -7 dB	Less than -20 dB
PMLN8084A	3-Wire xL Clear Tube Earpiece, GCAI Mini	Less than -7 dB	Less than -20 dB
PMLN8120A	Rx only xL Clear Tube Earpiece, 3.5 mm Jack	Less than -8 dB	Less than -20 dB
PMLN8085A	Behind-the-Head Headset, GCAI Mini	Less than 0 dB	Less than -14 dB
PMLN8086A	Over-the-Head Headset, GCAI Mini	Less than 0 dB	Less than -14 dB

3.8.1.9

Rx Audio Type

Selects the configuration of the audio output line.

This allows the user to determine the type of audio that is passed to the accessory connector from a Mobile. Different accessories such as modems or public address (PA) systems require different RX Audio types.

Filtered Squelch
Passes audio that meets the unmute rule governed by Squelch Type (e.g. CSQ, TPL, DPL).

Filtered Unsquelch
Passes audio all the time regardless of the Squelch Type.

Flat Unsquelch
Passes audio all the time regardless of the Squelch Type and will also pass any low speed signaling tones (e.g. TPL) that are normally filtered out.

Flat Squelch

Passes audio that meets the unmute rule governed by Squelch Type (e.g. CSQ, TPL, DPL) and will also pass any low speed signaling tones (e.g. TPL) that are normally filtered out.

NOTICE:
Filtered audio only allows audio in the voice range to pass. This gives better voice audio quality compared to flat (unfiltered) audio. Therefore, for voice communication, set the RX Audio Type to a filtered audio option. For data communication, set the RX Audio Type to the Flat Unsquelch option.

For MOTOTRBO conventional radios and 3600 Trunking capable radios in Conventional mode, Companding and Hear Clear are not supported in Audio Enhancement if this feature is set to Flat Unsquelch.

Starting from MOTOTRBO 2.0 radios, Audio Enhancement is disabled if this feature is set to Flat Unsquelch.

This feature is supported in Analog mode only.

3.8.1.10
Data Revert Channel Zone

Allows the user to select the Zone that is used to transmit and receive data on a designated channel.

NOTICE:
This feature does not influence internal MOTOTRBO data applications (e.g. text messages and location updates). It only applies to accessories.

This feature is supported in Analog mode only.

3.8.1.11
Data Revert Channel

Allows the user to transmit and receive data on a designated channel.

This channel is activated from an external data device connected through the radio's Accessory Connector. Any analog or 5 Tone channel can be the revert channel. The Selected option can be chosen if the user wishes to transmit data on the channel indicated by the radio's channel selector. This is a radio-wide feature.

NOTICE:
The Data Revert pin selection must be assigned to a programmable input pin (Pin #17, #19, #21, #20, #22 or #24).

This feature does not influence internal MOTOTRBO data applications (e.g. text messages and location updates). It only applies to accessories.

This feature is supported in Analog mode only.

3.8.1.12
Analog Accessory Emphasis

Emphasis enhances audio clarity for higher frequencies by applying an audio filter to reduce noise in the radio signal.

If None is selected, no filter is applied to the transmit and receive signals. Pre-emphasis (Pre) indicates the filtering of the transmit signal while De-emphasis (De) indicates the filtering of the receive signal.

None

Audio filtering is not applied to the transmit and receive signals.

De & Pre
Audio filtering is applied to both the transmit and receive signals.

NOTICE:
This feature is set to None and is unavailable if Audio Type is set to Flat Unsquelch in MOTOTRBO Repeaters/MOTOTRBO SLR Series repeaters or RX & TX Flat in MTR3000 base radio/repeater/MOTOTRBO SLR Series repeaters.

This feature is disabled if Repeater Mode is set to Digital.

This feature is applicable to MOTOTRBO Conventional radios, MOTOTRBO SLR Series repeaters, and MTR3000 base radio/repeater in Analog mode only.

3.8.1.13
Audio Type

This feature selects the configuration of the audio output line.

This is used to determine the type of audio that is passed through.

Filtered Squelch
Passes audio that meets the unmute rule governed by Squelch Type (e.g. CSQ, TPL, DPL). For transmit signals, this is used for external mic data. For receive signals, this is required for console operators.

Flat Unsquelch
Passes audio all the time regardless of the Squelch Type, hence repeater is constantly unmuted. For transmit signals, this is used for low speed signal tones (e.g. PL data) that are normally filtered out. For receive signals, this is required for trunking controllers.

RX & TX Filtered Squelch
Passes audio that meets the unmute rule governed by Squelch Type (e.g. CSQ, TPL, DPL). For transmit signals, this is used for external mic data. For receive signals, this is required for console operators.

RX & TX Flat
Passes audio all the time regardless of the Squelch Type, hence repeater is constantly unmuted. For transmit signals, this is used for low speed signal tones (e.g. PL data) that are normally filtered out. For receive signals, this is required for trunking controllers.

RX Flat Only
Passes RX audio all the time regardless of the Squelch Type but filters the TX audio according to the unmute rule.

TX Flat Only
Passes TX audio all the time regardless of the Squelch Type but filters the RX audio according to the unmute rule.

NOTICE:
Filtered audio only allows audio in the voice range to pass. This gives better voice audio quality compared to flat (unfiltered) audio. Therefore, for voice communication, set the Audio Type to the Filtered Squelch option. For data communication, set the Audio Type to the Flat Unsquelch option.

The values for Analog Accessory Emphasis and Emphasis are set to None, and are both disabled when Audio Type is set to Flat Unsquelch.

This feature is disabled if Repeater Mode is set to Digital.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Analog mode only and MTR3000 base radio/repeater.

3.8.1.14

Audio Priority

This feature determines which audio source has higher priority on the repeater when the Disable Repeat Path feature is disabled, and when GPIO Pins programmed with the Repeater Knockdown option is inactive.

The repeater transmits the audio source identified as having higher priority when both a console and a radio key-up simultaneously.

External PTT
Transmissions from the console have higher priority than transmissions from the radio.

Repeat Path
Transmissions from the radio have higher priority than transmissions from the console.

None
Priority is on a first come first served basis.

NOTICE:
This feature is disabled if the Disable Repeat Path feature is enabled.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

This feature is not supported for digital transmission in Dynamic Mixed Mode. Priority is on a first come first served basis.

3.8.1.15

TX Audio Priority

This drop-down list allows the user to configure the preempt priority of transmitting.

Available values are 0 and 3. The higher value means the higher the priority.

Range:

Maximum	Minimum	Increment
3	0	1

NOTICE:
This feature is disabled if the Disable Repeat Path feature is enabled.

This feature is applicable to MOTOTRBO SLR Series repeaters in Analog mode only.

3.8.1.16

Wireline TX Audio Priority

This drop-down list allows the user to configure the wireline priority of transmitting.

Available values are 0 and 3. The higher value means the higher the priority.

Range:

Maximum	Minimum	Increment
3	0	1

NOTICE:
This feature is disabled if the Disable Repeat Path feature is enabled.

This feature is applicable to MOTOTRBO SLR Series repeaters in Analog mode only.

3.8.1.17

FP TX Audio Priority

This drop-down list allows the user to configure the FP priority of transmitting.

Available values are 0 and 3. The higher value means the higher the priority.

Range:

Maximum	Minimum	Increment
3	0	1

NOTICE:
This feature is disabled if the Disable Repeat Path feature is enabled.

This feature is applicable to MOTOTRBO SLR Series repeaters in Analog mode only.

3.8.1.18

Repeater Audio Priority

This drop-down list allows the user to configure the preempt priority for repeating.

The higher value means the higher the priority.

Range:

Maximum	Minimum	Increment
1	0	1

NOTICE:
This feature is applicable to MOTOTRBO SLR Series repeaters in Analog mode only.

This feature is disabled if the **Disable Repeat Path** feature is enabled.

3.8.1.19

Disable Repeat Path

This feature enables or disables the repeat functionality of the repeater.

When this feature is enabled, a console or an external device controls when the repeater keys-up, hence turning the repeater into a base station. As a base station, the console operator then decides when to key-up the repeater's transmitter. This allows the console operator full control over the repeater's outbound traffic.

NOTICE:
The Repeater Knockdown pin selection is assigned to a programmable input pin (Pin #17, #19, #20, #21, or #22), and only disables the repeat path when the Disable Repeat Path feature is disabled.

The Audio Priority feature is disabled when this feature is enabled.

This feature is disabled when Repeater Mode is set to Digital.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Analog mode only.

This feature is not supported for digital transmission in Dynamic Mixed Mode.

The Repeater Fallback Timer feature can override this feature. For example, if both Disable Repeat Path and Repeater Fallback Timer feature are enabled, the repeater will repeat when fallback occurs eventhough Disable Repeat Path is turned on.

3.8.1.20
Debounce Duration (ms)

Defines how long a pin is asserted before the radio recognizes the press as a valid action prior to activating a feature.

This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
375 ms	0 ms	25 ms

3.8.1.21
Cable Type

The radio automatically detects an IMPRES™ cable type.

If there are specialty applications which need to connect to a radio to perform a specific function, this feature allows the user to configure the connection type according to the cable used.

Motorola Solutions
The cable attached is an IMPRES™ cable (e.g. the cable used for programming the radio). This is the default setting.

Generic
When a cable is attached, the connector is configured to operate for external device (e.g. Option Board) to access the three programmable GPIO pins. The microphone and speaker will be muted. (applicable to Portable configuration only).

Multi-Button PTT
When a cable is attached, the MB_PTT (active) causes the radio to change to a specified channel and assert the PTT. In other words, one button press on the accessory triggers a Channel Change and PTT. This choice is hidden when the Multi-Button PTT feature is disabled.

PC & Audio
When a cable is attached, the radio connection is configured to operate as a USB Device for IP and audio communications. (applicable to Portable configuration only).

Data Accessory
When a cable is attached, the radio connection is configured to operate as a USB Device for Non-IP communications. The microphone and speaker will be muted. (applicable to Portable configuration only).

Telemetry
When a cable is attached, the connector is configured to operate for Telemetry function. The microphone and speaker will be muted. (applicable to Portable configuration only).

Front PC & Audio
When a cable is attached, the front radio connection is configured to operate as a USB Device for IP and audio communications. (applicable to Mobile configuration only).

Rear PC & Audio
When a cable is attached, the rear radio connection is configured to operate as a USB Device for IP and audio communications. (applicable to Mobile configuration only).

Front Data Accessory
When a cable is attached, the front radio connection is configured to operate as a USB Device for Non-IP communication. The microphone and speaker will be muted. (applicable to Mobile configuration only).

Rear Data Accessory

When a cable is attached, the rear radio connection is configured to operate as a USB Device for Non-IP communication. The microphone and speaker will be muted. (applicable to Mobile configuration only).

NOTICE:
This feature must be configured correctly before connecting to the radio with a cable type other than an IMPRES™ cable. If there is a mismatch between this feature setting and the actual cable type used, damage to the attached hardware may occur.

3.8.1.22
Rear Emergency Pin Prior to Power Up

If enabled, when your radio is in power off state and you toggle the Rear Emergency pin, your radio boots up and sends the emergency alarm.

Otherwise, nothing happen when your radio is in power off state.

NOTICE: This setting does not affect the behavior if your radio is in power on state.

3.8.2
Bluetooth® (Accessories)

The **Bluetooth** section of the Accessories set contains the following fields:

3.8.2.1
Analog Mic Gain (dB) (Bluetooth)

Allows the user to configure the Bluetooth Analog Mic Gain.

This feature defines the amplification of the Bluetooth microphone. The audio level of the transmitting radio will be amplified by this value. However, the user on the receiving radio can still adjust the speaker level.

Range:

Maximum	Minimum	Increment
20 dB	-20 dB	1 dB

NOTICE:
This feature is supported in Analog mode only.

This feature is greyed-out when Permanent Discoverable is enabled.

3.8.2.2
Digital Mic Gain (dB) (Bluetooth)

Allows the user to configure the Bluetooth Digital Mic Gain.

This feature defines the amplification of the Bluetooth microphone. The audio level of the transmitting radio will be amplified by this value. However, the user on the receiving radio can still adjust the speaker level.

Range:

Maximum	Minimum	Increment
20 dB	-20 dB	1 dB

NOTICE:
This feature is supported in Digital mode only.

This feature is greyed-out when Permanent Discoverable is enabled.

3.8.3
Digital Audio (Accessories)

The **Digital Audio** section of the Accessories set contains the following fields:

3.8.3.1
Speaker Slot

This drop-down list defines the speaker slot that receives audio.

The following options are supported:

- Audio received on slot #1
- Audio received on slot #2
- Mix of audio received on slot #1 and #2
- None

NOTICE:
This feature is applicable to MOTOTRBO SLR 8000 repeaters when the digital audio feature is purchased.

3.8.3.2
Microphone Slot

This drop-down list defines that microphone audio will be transmitted OTA on **Slot #1** or **Slot #2**.

NOTICE:
This feature is applicable to MOTOTRBO SLR 8000 repeaters when the digital audio feature is purchased.

3.8.3.3
Microphone Call Type

This drop-down list defines the voice call type when microphone audio is transmitted Over The Air (OTA).

The following call types are supported:

- All Call
- Group Call
- Individual Call

NOTICE:
This feature is applicable to MOTOTRBO SLR 8000 repeaters when the digital audio feature is purchased.

3.8.3.4

Microphone Call Target ID

This feature sets an ID for a digital call member when microphone audio is transmitted Over The Air (OTA).

This ID is used to identify and communicate with a target radio or group of radios depending on the call type.

Range:

Maximum	Minimum	Increment
16776415	1	1

When call type is All call, this ID is fixed at 16777215 (value is not editable).

NOTICE:
This feature is applicable to MOTOTRBO SLR 8000 repeaters when the digital audio feature is purchased.

3.8.3.5

Repeat Audio Priority

This drop-down list allows the user to configure the preempt priority of repeating non-emergency voice calls.

Available values are 0, 2 and 1. The higher the value, the higher the priority.

Range:

Maximum	Minimum	Increment
2	0	1

NOTICE:
This feature is applicable to MOTOTRBO SLR 8000 repeaters when the digital audio feature is purchased.

3.8.3.6

Emergency Repeat Audio Priority

This drop-down list allows the user to configure the preempt priority of repeating emergency voice calls.

Available values are 0 , 2 and 1. The higher the value, the higher the priority.

Range:

Maximum	Minimum	Increment
2	0	1

NOTICE:
This feature is applicable to MOTOTRBO SLR 8000 repeaters when the digital audio feature is purchased.

3.8.3.7

Local Priority Audio

This drop-down list allows the user to configure the preempt priority of local microphone audio.

Available values are 0, 2 and 1. The higher the value, the higher the priority.

Range:

Maximum	Minimum	Increment
2	0	1

NOTICE:
This feature is applicable to MOTOTRBO SLR 8000 repeaters when the digital audio feature is purchased.

3.8.4
GPIO Physical Pins (Accessories)

The **GPIO Physical Pins** section of the Accessories set contains the following fields:

3.8.4.1
GPIO1 Feature

This selection allows the user to assign a function to a General Programmable Input Output (GPIO) pin for the device currently being configured.

NOTICE: Data direction for the pin is input only.

The following devices support the GPIO1 function selection:

- SLR5000 and SLR8000 repeater - Pin #2
- MOTOTRBO and MTR 3000 Repeaters - Pin #2 and Pin #11
- MOTOTRBO Light Subscribers - Pin #3
- MOTOTRBO Portable - Pin #4

For a complete listing of supported functions and descriptions, see GPIO Function Selections on page 288.

NOTICE:
There is an internal pull-up resistor that pulls the input line high if no external equipment is connected to that line. In this situation, when the Active Level of the input line is set to High, this causes the event assigned to the input line to be triggered on power up of the radio. Avoid this condition on input lines that are not connected to any external equipment by setting the Active Level to Low instead.

3.8.4.2
GPIO1 Active Level

This drop-down selection allows the user to set the trigger voltage level to **High** or **Low** in order to trigger the feature set for GPIO1.

3.8.4.3
GPIO1 Debounce

When enabled, the relevant pin must remain active for the time set in the Debounce Duration field in order for the feature set for GPIO1 to activate.

The Debounce Duration (ms) on page 274 is set under the General section of the Accessories Set.

3.8.4.4
GPIO1 GNSS Report

This check box allows the user to enable or disable the GNSS Report feature for GPIO1.

See GNSS Report on page 295 for a description of the feature.

The following device pins support this feature:

- MOTOTRBO Mobile - Pin #17
- MOTOTRBO Portable - Pin #4

NOTICE:
This feature is available when the value of the corresponding feature field is set to **Telemetry VIO 1** to **Telemetry VIO 5** or **Generic Input 1** to **Generic Input 6**.

3.8.4.5
GPIO2 Feature

This selection allows the user to assign a function to a General Programmable Input Output (GPIO) pin for the device currently being configured.

NOTICE: Data direction for the pin is input only.

The following devices support the GPIO2 function selection:

- SLR5000 and SLR8000 series repeater - Pin #2
- MOTOTRBO and MTR 3000 Repeaters - Pin #2 and Pin #11
- MOTOTRBO Light Subscribers - Pin #3
- MOTOTRBO Portable - Pin #4

For a complete listing of supported functions and descriptions, see GPIO Function Selections on page 288.

NOTICE:
There is an internal pull-up resistor that pulls the input line high if no external equipment is connected to that line. In this situation, when the Active Level of the input line is set to High, this causes the event assigned to the input line to be triggered on power up of the radio. Avoid this condition on input lines that are not connected to any external equipment by setting the Active Level to Low instead.

3.8.4.6
GPIO2 Active Level

This drop-down selection allows the user to set the trigger voltage level to **High** or **Low** in order to trigger the feature set for GPIO2.

3.8.4.7
GPIO2 Debounce

When enabled, the relevant pin must remain active for the time set in the Debounce Duration field in order for the feature set for GPIO2 to activate.

The Debounce Duration (ms) on page 274 is set under the General section of the Accessories Set.

3.8.4.8
GPIO2 GNSS Report

This check box allows the user to enable or disable the GNSS Report feature for GPIO2.

See GNSS Report on page 295 for a description of the feature.

The following device pins support this feature:

- MOTOTRBO Mobile - Pin #19
- MOTOTRBO Portable - Pin #5

NOTICE:
This feature is available when the value of the corresponding feature field is set to **Telemetry VIO 1** to **Telemetry VIO 5** or **Generic Input 1** to **Generic Input 6**.

3.8.4.9
GPIO3 Feature

This selection allows the user to assign a function to a General Programmable Input Output (GPIO) pin for the device currently being configured.

The following devices support the GPIO3 function selection:

- SLR5000 and SLR8000 series repeater - Pin #15
- MOTOTRBO and MTR 3000 Repeaters - Pin #15
- MOTOTRBO Light Subscribers - Pin #6
- MOTOTRBO Portable - Pin #9

For a complete listing of supported functions and descriptions, see GPIO Function Selections on page 288.

NOTICE:
There is an internal pull-up resistor that pulls the input line high if no external equipment is connected to that line. In this situation, when the Active Level of the input line is set to High, this causes the event assigned to the input line to be triggered on power up of the radio. Avoid this condition on input lines that are not connected to any external equipment by setting the Active Level to Low instead.

3.8.4.10
GPIO3 Active Level

This drop-down selection allows the user to set the trigger voltage level to **High** or **Low** in order to trigger the feature set for GPIO3.

3.8.4.11
GPIO3 Debounce

When enabled, the relevant pin must remain active for the time set in the Debounce Duration field in order for the feature set for GPIO3 to activate.

The Debounce Duration (ms) on page 274 is set under the General section of the Accessories Set.

3.8.4.12
GPIO3 GNSS Report

This check box allows the user to enable or disable the GNSS Report feature for GPIO3.

See GNSS Report on page 295 for a description of the feature.

The following device pins support this feature:

- MOTOTRBO Mobile - Pin #21

- MOTOTRBO Portable - Pin #9

NOTICE:
This feature is available when the value of the corresponding feature field is set to **Telemetry VIO 1** to **Telemetry VIO 5** or **Generic Input 1** to **Generic Input 6**.

3.8.4.13 GPIO4 Feature

This selection allows the user to assign a function to a General Programmable Input Output (GPIO) pin for the device currently being configured.

The following devices support the GPIO4 function selection:

- SLR1000 repeaters - Pin #4
- SLR5000 and SLR8000 repeaters - Pin#23
- MOTOTRBO Light Subscribers - Pin #8
- MOTOTRBO Portable - Pin #12

For a complete listing of supported functions and descriptions, see GPIO Function Selections on page 288.

NOTICE:
There is an internal pull-up resistor that pulls the input line high if no external equipment is connected to that line. In this situation, when the Active Level of the input line is set to High, this causes the event assigned to the input line to be triggered on power up of the radio. Avoid this condition on input lines that are not connected to any external equipment by setting the Active Level to Low instead.

3.8.4.14 GPIO4 Active Level

This drop-down selection allows the user to set the trigger voltage level to **High** or **Low** in order to trigger the feature set for GPIO4.

3.8.4.15 GPIO4 Debounce

When enabled, the relevant pin must remain active for the time set in the Debounce Duration field in order for the feature set for GPIO4 to activate.

The Debounce Duration (ms) on page 274 is set under the General section of the Accessories Set.

3.8.4.16 GPIO4 GNSS Report

This check box allows the user to enable or disable the GNSS Report feature for GPIO4.

See GNSS Report on page 295 for a description of the feature.

The following device pins support this feature:

- MOTOTRBO Mobile - Pin #12
- MOTOTRBO Portable - Pin #8

NOTICE:
This feature is available when the value of the corresponding feature field is set to **Telemetry VIO 1** to **Telemetry VIO 5** or **Generic Input 1** to **Generic Input 6**.

3.8.4.17
GPIO5 Feature

This selection allows the user to assign a function to a General Programmable Input Output (GPIO) pin for the device currently being configured.

The following devices support the GPIO5 function selection:

- SLR5000 and SLR8000 repeaters - Pin #24

For a complete listing of supported functions and descriptions, see GPIO Function Selections on page 288.

NOTICE:
There is an internal pull-up resistor that pulls the input line high if no external equipment is connected to that line. In this situation, when the Active Level of the input line is set to High, this causes the event assigned to the input line to be triggered on power up of the radio. Avoid this condition on input lines that are not connected to any external equipment by setting the Active Level to Low instead.

3.8.4.18
GPIO5 Active Level

This drop-down selection allows the user to set the trigger voltage level to **High** or **Low** in order to trigger the feature set for GPIO5.

3.8.4.19
GPIO5 Debounce

When enabled, the relevant pin must remain active for the time set in the Debounce Duration field in order for the feature set for GPIO5 to activate.

The Debounce Duration (ms) on page 274 is set under the General section of the Accessories Set.

3.8.4.20
GPIO5 GNSS Report

This check box allows the user to enable or disable the GNSS Report feature for GPIO5.

See GNSS Report on page 295 for a description of the feature.

NOTICE:
This feature is available when the value of the corresponding feature field is set to **Telemetry VIO 1** to **Telemetry VIO 5** or **Generic Input 1** to **Generic Input 6**.

3.8.4.21
GPIO6 Feature

This selection allows the user to assign a function to a General Programmable Input Output (GPIO) pin for the device currently being configured.

The following devices support the GPIO6 function selection:

- SLR1000 repeaters - Pin#2
- SLR5000 and SLR8000 repeaters - Pin #8
- MOTOTRBO and MTR 3000 Repeaters - Pin #8 and Pin #25

For a complete listing of supported functions and descriptions, see GPIO Function Selections on page 288.

NOTICE:
There is an internal pull-up resistor that pulls the input line high if no external equipment is connected to that line. In this situation, when the Active Level of the input line is set to High, this causes the event assigned to the input line to be triggered on power up of the radio. Avoid this condition on input lines that are not connected to any external equipment by setting the Active Level to Low instead.

3.8.4.22
GPIO6 Active Level

This drop-down selection allows the user to set the trigger voltage level to **High** or **Low** in order to trigger the feature set for GPIO6.

3.8.4.23
GPIO6 Debounce

When enabled, the relevant pin must remain active for the time set in the Debounce Duration field in order for the feature set for GPIO6 to activate.

The Debounce Duration (ms) on page 274 is set under the General section of the Accessories Set.

3.8.4.24
GPIO6 GNSS Report

This check box allows the user to enable or disable the GNSS Report feature for GPIO6.

See GNSS Report on page 295 for a description of the feature.

The following device pin support this feature:

- MOTOTRBO Mobile - Pin #20

NOTICE:
This feature is available when the value of the corresponding feature field is set to **Telemetry VIO 1** to **Telemetry VIO 5** or **Generic Input 1** to **Generic Input 6**.

3.8.4.25
GPIO7 Feature

This selection allows the user to assign a function to a General Programmable Input Output (GPIO) pin for the device currently being configured.

The following devices support the GPIO7 function selection:

- SLR1000 repeaters - Pin#5
- SLR5000 and SLR8000 repeaters - Pin #10
- MOTOTRBO and MTR 3000 Repeaters - Pin #10 and Pin #12
- MOTOTRBO Light Subscribers - Pin #12

For a complete listing of supported functions and descriptions, see GPIO Function Selections on page 288.

NOTICE:
There is an internal pull-up resistor that pulls the input line high if no external equipment is connected to that line. In this situation, when the Active Level of the input line is set to High, this causes the event assigned to the input line to be triggered on power up of the radio. Avoid this condition on input lines that are not connected to any external equipment by setting the Active Level to Low instead.

3.8.4.26
GPIO7 Active Level

This drop-down selection allows the user to set the trigger voltage level to **High** or **Low** in order to trigger the feature set for GPIO7.

3.8.4.27
GPIO7 Debounce

When enabled, the relevant pin must remain active for the time set in the Debounce Duration field in order for the feature set for GPIO7 to activate.

The Debounce Duration (ms) on page 274 is set under the General section of the Accessories Set.

3.8.4.28
GPIO7 GNSS Report

This check box allows the user to enable or disable the GNSS Report feature for GPIO7.

See GNSS Report on page 295 for a description of the feature.

The following device pin support this feature:

- MOTOTRBO Mobile - Pin #22

NOTICE:
This feature is available when the value of the corresponding feature field is set to **Telemetry VIO 1** to **Telemetry VIO 5** or **Generic Input 1** to **Generic Input 6**.

3.8.4.29
GPIO8 Feature

This selection allows the user to assign a function to a General Programmable Input Output (GPIO) pin for the device currently being configured.

The following devices support the GPIO8 function selection:

- SLR5000 and SLR8000 series repeater - Pin #21
- MOTOTRBO Light Subscribers - Pin #14

For a complete listing of supported functions and descriptions, see GPIO Function Selections on page 288.

NOTICE:
There is an internal pull-up resistor that pulls the input line high if no external equipment is connected to that line. In this situation, when the Active Level of the input line is set to High, this causes the event assigned to the input line to be triggered on power up of the radio. Avoid this condition on input lines that are not connected to any external equipment by setting the Active Level to Low instead.

3.8.4.30
GPIO8 Active Level

This drop-down selection allows the user to set the trigger voltage level to **High** or **Low** in order to trigger the feature set for GPIO8.

3.8.4.31
GPIO8 Debounce

When enabled, the relevant pin must remain active for the time set in the Debounce Duration field in order for the feature set for GPIO8 to activate.

The Debounce Duration (ms) on page 274 is set under the General section of the Accessories Set.

3.8.4.32
GPIO8 GNSS Report

This check box allows the user to enable or disable the GNSS Report feature for GPIO8

See GNSS Report on page 295 for a description of the feature.

The following device pin support this feature:

- MOTOTRBO Mobile - Pin #24

NOTICE:
This feature is available when the value of the corresponding feature field is set to **Telemetry VIO 1** to **Telemetry VIO 5** or **Generic Input 1** to **Generic Input 6**.

3.8.4.33
GPIO9 Feature

This selection allows the user to assign a function to a General Programmable Input Output (GPIO) pin for the device currently being configured.

The following device supports the GPIO9 function selection:

- SLR series repeater - Pin #6

For a complete listing of supported functions and descriptions, see GPIO Function Selections on page 288.

NOTICE:
There is an internal pull-up resistor that pulls the input line high if no external equipment is connected to that line. In this situation, when the Active Level of the input line is set to High, this causes the event assigned to the input line to be triggered on power up of the radio. Avoid this condition on input lines that are not connected to any external equipment by setting the Active Level to Low instead.

3.8.4.34
GPIO9 Active Level

This drop-down selection allows the user to set the trigger voltage level to **High** or **Low** in order to trigger the feature set for GPIO9.

3.8.4.35
GPIO9 Debounce

When enabled, the relevant pin must remain active for the time set in the Debounce Duration field in order for the feature set for GPIO9 to activate.

The Debounce Duration (ms) on page 274 is set under the General section of the Accessories Set.

3.8.4.36
GPIO10 Feature

This selection allows the user to assign a function to a General Programmable Input Output (GPIO) pin for the device currently being configured.

The following device supports the GPIO10 function selection:

- SLR5000 and SLR8000 repeaters - Pin #5
- MOTOTRBO and MTR 3000 Repeaters - Pin #5

For a complete listing of supported functions and descriptions, see GPIO Function Selections on page 288.

NOTICE:
There is an internal pull-up resistor that pulls the input line high if no external equipment is connected to that line. In this situation, when the Active Level of the input line is set to High, this causes the event assigned to the input line to be triggered on power up of the radio. Avoid this condition on input lines that are not connected to any external equipment by setting the Active Level to Low instead.

3.8.4.37
GPIO10 Active Level

This drop-down selection allows the user to set the trigger voltage level to **High** or **Low** in order to trigger the feature set for GPIO10.

3.8.4.38
GPIO10 Debounce

When enabled, the relevant pin must remain active for the time set in the Debounce Duration field in order for the feature set for GPIO10 to activate.

The Debounce Duration (ms) on page 274 is set under the General section of the Accessories Set.

3.8.4.39
GPIO10 GNSS Report

This check box allows the user to enable or disable the GNSS Report feature for GPIO10

See GNSS Report on page 295 for a description of the feature.

The following device pin support this feature:

- MOTOTRBO Mobile - Pin #26

NOTICE:
This feature is available when the value of the corresponding feature field is set to **Telemetry VIO 1** to **Telemetry VIO 5** or **Generic Input 1** to **Generic Input 6**.

3.8.4.40
GPIO11 Feature

This selection allows the user to assign a function to a General Programmable Input Output (GPIO) pin for the device currently being configured.

The following device supports the GPIO11 function selection:

- SLR5000 and SLR8000 repeaters - Pin #11

For a complete listing of supported functions and descriptions, see GPIO Function Selections on page 288.

NOTICE:
There is an internal pull-up resistor that pulls the input line high if no external equipment is connected to that line. In this situation, when the Active Level of the input line is set to High, this causes the event assigned to the input line to be triggered on power up of the radio. Avoid this condition on input lines that are not connected to any external equipment by setting the Active Level to Low instead.

3.8.4.41
GPIO11 Active Level

This drop-down selection allows the user to set the trigger voltage level to **High** or **Low** in order to trigger the feature set for GPIO11.

3.8.4.42
GPIO11 Debounce

When enabled, the relevant pin must remain active for the time set in the Debounce Duration field in order for the feature set for GPIO11 to activate.

The Debounce Duration (ms) on page 274 is set under the General section of the Accessories Set.

3.8.4.43
GPIO12 Feature

This selection allows the user to assign a function to a General Programmable Input Output (GPIO) pin for the device currently being configured.

The following device supports the GPIO12 function selection:

- SLR5000 and SLR8000 repeaters - Pin #12

For a complete listing of supported functions and descriptions, see GPIO Function Selections on page 288.

NOTICE:
There is an internal pull-up resistor that pulls the input line high if no external equipment is connected to that line. In this situation, when the Active Level of the input line is set to High, this causes the event assigned to the input line to be triggered on power up of the radio. Avoid this condition on input lines that are not connected to any external equipment by setting the Active Level to Low instead.

3.8.4.44
GPIO 12 Active Level

This drop-down selection allows the user to set the trigger voltage level to **High** or **Low** in order to trigger the feature set for GPIO12.

3.8.4.45
GPIO12 Debounce

When enabled, the relevant pin must remain active for the time set in the Debounce Duration field in order for the feature set for GPIO12 to activate.

The Debounce Duration (ms) on page 274 is set under the General section of the Accessories Set.

3.8.4.46

GPIO Function Selections

The following table contains a list of all possible GPIO functions that can be assigned to GPIO physical pins.

Table 46: GPIO Function Selections

Function	GPIO Supporting Function	Description
5 Tone Call 1 – 6	GPIO2, GPIO3, GPIO4, GPIO6, GPIO7, and GPIO8	These are output lines, that when activated, sends the telegram as configured for Call buttons (Call 1, Call 2, Call 3, Call 4, Call 5 and Call 6). The same telegram is sent when Call 1 button is pressed (available when the 5 Tone feature is enabled in the device).
5 Tone Decoder Output Control	GPIO2, GPIO3, GPIO4, GPIO6, GPIO7, and GPIO8	This is an output line that is asserted or deasserted based on the Decoder Output Control options programmed in the radio upon successful decoding of a telegram sequence (available when the 5 Tone feature is enabled in the device).
AC Power Failure	All GPIO	Allows the user to enable/disable the AC Power Failure. When enabled, the repeater shows the alarm related to the AC failure.
Antenna Relay	All GPIO	When the radio is operating as a base station (instead of as a repeater), an antenna relay may be used to share the antenna between the receiver and transmitter connectors. When the radio is in the receive mode, the Antenna Relay pin is set to an "INACTIVE" signal condition and the antenna relay is deactivated. When transitioning to the transmit state, the Antenna Relay pin is set to an "ACTIVE" signal condition. The antenna relay is activated and after a short delay the repeater/base station will begin transmitting.
Carrier Operated Relay	All GPIO	This is an output line to the Analog Phone Patch box that

Function	GPIO Supporting Function	Description
		is activated whenever the repeater starts transmission to the Analog Phone Patch box and deactivated whenever the repeater ends transmission to the Analog Phone Patch box (applicable to repeater configuration only).
Channel Select 1 – 6	All GPIO	This is an input line that allows an external device to select a channel. When the pin is assigned to this option, the pin can be triggered individually or combined with other pins assigned to this option to select a channel (applicable to Mobile configuration only).
Clear To Send	GPIO2, GPIO3, GPIO4, GPIO6, GPIO7, and GPIO8	This is an output line used for indicating to an external modem that the radio has keyed up and data transmission may begin. This feature is useful because the line will not be asserted until audible transmission can really take place. MDC side-tones and Transmit Inhibit on Busy can result in delayed or blocked channel access.
CSQ Detect	All GPIO	This is an output line that indicates to the user when an RX signal is present (applicable to Analog mode only).
Data PTT	GPIO1, GPIO2, GPIO3, GPIO4, GPIO6, GPIO7, and GPIO8	This is an input line used for data transmission from a device connected to a radio, another radio, or device. When the device that is connected to the radio is set to send data over the air, for instance, MDC data or GNSS coordinates, it triggers the Data PTT before it sends the data to the radio which in turn transmits the data over the air to the target radio or another device (applicable to Analog mode, Mobile configuration only). Overrides Voice

Function	GPIO Supporting Function	Description
Data Revert	GPIO1, GPIO2, GPIO3, GPIO4, GPIO6, GPIO7, and GPIO8	This is an input line used for predefining an alternative channel to be used during data transmission (applicable to Analog mode, Mobile configuration only).
Disable	All GPIO	This is an input line, that when activated, disables the repeater. When this is de-activated, the repeater is re-enabled. Note that the repeater will reset before changing its state.
Ext Alarm/Horn & Lights	GPIO2 and GPIO10	This is an output line used to inform the user using the horn or/and lights if there is an incoming call alert/private call when the user is not in their vehicle (applicable to Mobile configuration only). See also Alarm (Horn & Lights).
Ext Mic Off Hook	GPIO1, GPIO2, GPIO3, GPIO4, GPIO6, GPIO7, and GPIO8	This is an input line used for voice transmission via an external microphone with Push-to-Talk (PTT) buttons (applicable to Mobile configuration only). This is an input line, that when activated, will key the repeater and cause the repeater to transmit audio any present on the Ext Mic input line. PTT priority is determined by the Audio Priority setting in RM (applicable to Analog mode, Repeater configuration only).
Ext Mic PTT	GPIO1, GPIO2, GPIO3, GPIO4, GPIO6, GPIO7, and GPIO8	This is an input line used for voice transmission through an external microphone with Push-to-Talk (PTT) buttons.
External PTT	All GPIO	This is an input line, that when activated, keys the repeater and causes the repeater to transmit audio presence on the TX pins of the J7 backplane connector. PTT priority is determined by the Audio Priority setting in RM (applicable to Analog mode).
FCC Type 2 Monitor	All GPIO	This is an input line, that when activated, prevents the repeat-

Function	GPIO Supporting Function	Description
		er from keying up and from repeating inbound calls in a IP Site Connect environment (applicable to Repeater configuration only).
Football Knockdown	All GPIO	This is an input line, that when activated, disables the receive and transmit operations of the repeater for as long as the pin is activated. CWID will not be transmitted while this option line is active (applicable to Single Site Digital mode, Repeater configuration only).
Generic Input 1 – 6	GPIO1, GPIO2, GPIO3, GPIO4, GPIO6, GPIO7, and GPIO8	These input lines allow for status indication to the option board and level switching from the option board (applicable to Mobile configuration only).
Generic Output 1– 3	GPIO1. GPIO2, GPIO3, GPIO4, GPIO6, GPIO7, GPIO8, and GPIO10.	These output lines allow for status indication to the option board and level switching from the option board (applicable to Mobile configuration only).
Generic Outputs 2 – 6	GPIO1, GPIO2, GPIO3, GPIO4 (until output 5 only), GPIO6, GPIO7, GPIO8, and GPIO10.	These output lines allow for status indication to the option board and level switching from the option board (applicable to Mobile configuration only).
Major Alarm	ALL GPIO	This is an output line that is activated by a repeater when it enters a locked state after three instances of major hardware failure have occurred.
Minor Alarm	ALL GPIO	This is an output line, that is activated by a repeater when it is reporting an alarm triggered by minor hardware failure.
Monitor	ALL GPIO	This is an input line that allows the user to monitor a channel. In analog mode, the user is able to listen to the traffic, in other words, the radio will unmute to the actual voice or data traffic in process. In digital mode, the user can only check if activity is present before transmitting, in other words, the radio will emit an

Function	GPIO Supporting Function	Description
		audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to Always. A channel cannot be monitored if any other value of TX Admit Criteria is selected.
Multi-Button PTT	GPIO1, GPIO2, GPIO3, and GPIO4.	When a cable is attached, the MB_PTT (active) causes the radio to change to a specified channel and assert the PTT. In other words, one button press on the accessory triggers a Channel Change and PTT. This choice is hidden when the Multi-Button PTT feature is disabled.
PL/Talkgroup Detect	ALL GPIO	This is an output line used for permitting an output to be activated when the radio is receiving carrier and the Unmute Rule for the radio is satisfied on the channel.
Repeater Knockdown	ALL GPIO	This is an input line, that when activated, will disable the internal repeat path of the repeater for as long as the pin is activated. An external device can then control when the repeater keys-up (applicable to Analog mode, Repeater configuration only).
Request to Send	GPIO1, GPIO2, GPIO3, GPIO4, GPIO6, GPIO7, and GPIO8.	This is an input line for initiating a data call from an external device and in doing so, the radio transmits without sending sub-audible signaling, in other words. the following are disabled: PL encode, Reverse Burst/TOC, and PTT ID (applicable to Analog mode).
Reset	ALL GPIO	This is an input line, that when activated, resets the repeater.
Response Inhibit	GPIO8	This is an input line where it allows user to place the radio in a state (through a button

Function	GPIO Supporting Function	Description
		press) whereby the radio will not generate any outgoing transmissions in response to unsolicited incoming transmissions. This includes not transmitting back to Radio Check", Radio Monitor , Radio Disable, Confirmed Private Calls, Confirmed Text Message, and so forth. In this state, the user is still be able to initiate outgoing transmissions manually (for example, voice transmissions and text messages).
RX Audio Mute	GPIO1, GPIO2, GPIO3, GPIO4, GPIO6, GPIO7, and GPIO8.	This is an input line, that when activated, mutes the audio for the receiving radio even though the radio meets all the unmuting conditions (applicable to Analog mode).
Site Slot Sync Output	ALL GPIO	This is an output line, that when activated, relays master timing signals to slot sync slave repeaters in a MOTOTRBO Link system. This function is used with the GPIO Slot Timing Master on page 575 field.
Site Slot Sync Input	ALL GPIO	This is an input line, that when activated, receives master timing signals from the slot sync master repeater in a MOTOTRBO Link system. This function is used with the GPIO Slot Timing Master on page 575 field.
Telemetry VIO 1 – 3	GPIO1	These lines can be an input or an output line depending on the configuration in the radio. Setting the input or output capability on this line allows the user to control and monitor its own pin or another radio pin, which in turn can control and monitor any external hardware that is attached to the radio.
Telemetry VIO 1 – 5	GPIO1, GPIO2, GPIO3, GPIO4, GPIO6, GPIO7, and GPIO8.	These lines can be an input or an output line depending on the configuration in the radio. Setting the input or output capability on this line allows the

Function	GPIO Supporting Function	Description
		user to control and monitor its own pin or another radio pin, which in turn can control and monitor any external hardware that is attached to the radio.
TOC/Reverse Burst Disable	GPIO1, GPIO2, GPIO3, GPIO4, GPIO6, GPIO7, and GPIO8.	This is an input line used to inhibit the transmission of the TPL Reverse Burst or the DPL Turn-Off Code (applicable to Analog mode, Mobile configuration only).
Transmit Inhibit	GPIO2, GPIO3, GPIO6, GPIO7, and GPIO8.	This is an input line used to prevent the station from being keyed through any PTT (external or internal). The station remains functional in every other regard.
TX PL Inhibit	ALL GPIO	This is an input line, that when activated, will inhibit the transmission of sub-audible signaling (applicable to Analog mode, Mobile and Repeater configuration only).
TX Power Level High	ALL GPIO	This is an input line, that when activated, sets the repeater to use the high power level for TX transmission. When de-activated, the repeater uses the low power level for TX transmission. **NOTICE:** The repeater resets before changing its TX power level (applicable to Repeater configuration only).
Unassigned	ALL GPIO	No functionality is assigned to the pin.
Wireline External COR	ALL GPIO	This is an output line used for permitting an output to be activated when the radio is receiving carrier and radio's Unmute Rule has been satisfied on the channel (applicable to Mobile configuration only).
Wireline External PTT	ALL GPIO	This is an input line, that allows the audio present on the TX Wireline to be transmitted.

Function	GPIO Supporting Function	Description
Wireline Mute Input	ALL GPIO	This is an input line, that when activated, indicates if a particular personality (channel) is actively transmitting.
Wireline Mute Ouput	ALL GPIO	This is an output line, that when activated, indicates if a particular personality (channel) is actively transmitting.

3.8.4.47
GNSS Report

The application allows the user to enable or disable triggering a GNSS Report for each GPIO line.

If the radio receives an LRRP request for GPIO pin status change condition, an LRRP report is sent to the originator of the LRRP request if the GNSS Report check box is enabled and the active level is triggered. To enable GNSS report, the GPIO pin must be set as Generic Input or Telemetry VIO and the telemetry action is set as an output command (output command indicates that the Telemetry VIO is an input pin). For portable radios, the user can only enable the GNSS Report when the cable type is set as Generic Cable or Telemetry Cable or Motorola Solutions Cable for Telemetry.

NOTICE:
This feature is available when the value of the corresponding feature field is set to **Telemetry VIO 1** to **Telemetry VIO 5** or **Generic Input 1** to **Generic Input 6**.

3.8.5
Horns and Lights (Accessories)

The **Horns & Lights** section of the Accessories set contains the following fields:

3.8.5.1
Alarm

Allows the user to be alerted to an incoming call when away from the vehicle.

The vehicle's Horn or Lights or both are used depending on which option is connected to the accessory port. When the radio receives a call alert, there will be a delay before activating the Horn and/or Lights. The delay is programmable using the Horn & Lights Delay Time feature. Once activated, the Horn and/or Lights remains active for the duration specified by the Horn & Lights Duration feature. The user may turn the Horn and/or Lights off by pressing any keypad or button except the backlight button and volume knob. The Horn & Lights feature can be toggled between on or off, via a short or long programmable button press (Horn & Lights On/Off) or Horn/Lights (Utilities Menu) feature. This is a radio-wide feature.

Alarm Re-Arm
Upon power up, the Horn and Lights feature is enabled or disabled depending on its status at last power down.

Non-Permanent Manual Re-Arm
The Horn and Lights feature needs to always be manually enabled (i.e. by toggling the programmable button or menu assigned to this feature).

Permanent External Alarm
The radio always power up with the Horn and Lights feature on, regardless of its status at last power down.

3.8.5.2
Duration (sec)

Sets the amount of time the vehicle's horn and/or lights are active.

This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
∞ sec	5 sec	5 sec

NOTICE:
The vehicle's horn and/or lights will be permanently active if the Infinity option is selected.

3.8.5.3
Delay Time (sec)

Specifies the delay duration before the vehicle's horn and/or lights are activated.

This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
15 sec	0 sec	1 sec

3.8.6
Wireline (Accessories)

The **Wireline** section of the Accessories set contains the following fields:

3.8.6.1
Remote Control Mode

Sets the type of remote control method that the wireline uses to decode the function signals from the console.

This is a radio-wide feature.

TRC7
Allows seven different channels to be selected, as well as the monitor function and three wild card GPIOs. This option also causes the Revert Channel list to contain only None and the first seven channels sorted by position.

TRC15
Allows 15 different channels to be selected, as well as the monitor function. This option also causes the Revert Channel list to contain only None and the first 15 channels sorted by position.

DC
Allows five different channels to selected, as well as the monitor function. This option also causes the Revert Channel list to contain only None and the first five channels sorted by position.

None
Disables all remote control functions, though the transmit and receive audio paths are still supported via the wireline.

NOTICE:
The HLGT ALC Mode, TX Guard Tone, Monitor Mode, PTT Dropout Timer (ms), and Revert Channel features are disabled when this feature is set to None.

The HLGT ALC Mode and TX Guard Tone features are disabled when this feature is set to DC.

This feature is applicable to MTR3000 base radio/repeater only.

3.8.6.2 Wire Mode

Sets the wireline interface for either a 2-wire mode or 4-wire mode operation.

This is a radio-wide feature.

2 Wire
The console audio to and from the radio shares a single pair of conductors which interface to the radio at Line 2 of the J6 backplane connector.

4 Wire
The console sends transmitter audio to the radio via a dedicated pair of conductors to Line 1 of the radio, while receive audio from Line 2 of the radio will be sent to the console on a separate dedicated pair of conductors.

NOTICE: The RX Squelch Mode, Status Tone, RX Guard Tone, and Repeater Fallback Timer features are disabled when this feature is set to 2 Wire.

3.8.6.3 Line Impedance

Sets the wireline RX audio (output) and TX audio (input) impedance of the wireline board.

The impedance of the wireline board must be set to match that of the backhaul interface. The Line Impedance is based on the country or region. This is a radio-wide feature.

600 Ohm
For Argentina, Canada, Chile, Columbia, Ecuador, El Salvador, Guam, Hong Kong, India, Indonesia, Japan, Jordan, Kazakhstan, Kuwait, Macao, Malaysia, Mexico, Oman, Pakistan, Peru, Philippines, Russia, Saudi Arabia, Singapore, South Korea, Taiwan, Thailand, UAE, USA and Yemen.

270 Ohm + (150 nF || 750 Ohm)
For Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Bahrain, Croatia, Cyprus, Czech Republic, Egypt, Hungary, Israel, Latvia, Lebanon, Malta, Morocco, Nigeria, Poland, Romania, Slovakia and Slovenia.

220 Ohm + (115 nF || 820 Ohm)
For Australia, Bulgaria and South Africa.

370 Ohm + (310 nF || 620 Ohm)
For New Zealand.

900 Ohm
For Brazil.

320 Ohm + (230 nF || 1050 Ohm)
For United Kingdom.

200 Ohm + (100 nF || 680 Ohm)
For China.

900 Ohm || 30 nF
For legacy MTR2000.

NOTICE:
This feature is applicable to MTR3000 base radio/repeater only.

3.8.6.4 TX Guard Tone

Sets the guard tone frequency detector and notch on the transmit path of the wireline to either Disabled, 2100 Hz, 2175 Hz or 2325 Hz.

When 2-wire or 4-wire tone remote control is desired (TRC7 or TRC15), the wireline guard tone frequency must be set to the same guard tone frequency as generated by the console or deskset. If the tone remote control is not used, it is recommended to set the guard tone frequency to Disabled for full spectrum audio. This is a radio-wide feature.

NOTICE:
This feature is disabled if the Remote Control Mode feature is set to None or DC.

This feature is applicable to MTR3000 base radio/repeater and SLR Series repeaters only.

3.8.6.5 PTT Dropout Timer (ms)

Specifies the allowed hold over time after the loss of low level guard tone (LLGT) or DC current before the station dekeys.

This timer allows for momentary LLGT or DC current loss without dekeying the station. LLGT is a tone generated by the console or deskset which signals the wireline to issue a push to talk (PTT) to the station. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
2000 ms	20 ms	1 ms

NOTICE:
This feature is disabled if the Remote Control Mode feature is set to None.

3.8.6.6 Revert Channel Zone

Allows the user to select the Revert Channel from the list.

The user can select “None” or all the other available channels in the list.

3.8.6.7 Revert Channel

Selects the revert channel of the radio from the list of all the available channels or none.

The revert channel is the channel that the radio will return to after a call is completed. If None is selected, after a call is completed, the radio remains on the channel of the completed call. This is a radio-wide feature.

NOTICE: This feature is disabled if the Remote Control Mode feature is set to None.

3.8.6.8
Monitor Mode

Defines the behavior of the Monitor function as either latching or momentary.

This is a radio-wide feature.

Latching
The monitor function is asserted until the next remote control sequence is sent via the console or deskset.

Momentary
The monitor function is asserted for four seconds.

NOTICE: This feature is disabled if the Remote Control Mode feature is set to None.

3.8.6.9
Squelch Hysteresis (dB)

Determines how much the level of the transmitter audio must drop below the squelch threshold before the squelch closes.

This parameter aids in minimizing squelch chatter. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
6 dB	0 dB	1 dB

3.8.6.10
HLGT ALC Mode

Allows the user to enable or disable the High Level Guard Tone Automatic Level Control (HLGT ALC) Mode.

If enabled, the radio automatically adjusts the transmit audio up to -4/+6dB to compensate for changes in the line levels. This adjustment is made when HLGT is detected. This is a radio-wide feature.

NOTICE: This feature is disabled if the Remote Control Mode feature is set to None or DC.

3.8.6.11
Status Tone

Allows the user to enable or disable the Wireline Status Tone.

When enabled, a Status Tone of 2175Hz will be sent to the voting comparator to indicate that the receiver is squelched. When the receiver unsquelches, the audio which is absent of Status Tone, is sent to the voting comparator to be voted. This is a radio-wide feature.

NOTICE:
This feature is disabled if the Wire Mode feature is set to 2 Wire.

This feature is applicable to MTR3000 base radio/repeater and SLR Series repeaters only.

3.8.6.12 RX Guard Tone

Allows the user to enable or disable the Wireline Receive Guard Tone.

When enabled, a Guard Tone of 1950Hz, along with the audio, is supplied to the voting comparator once the receive qualifier has been met. The RX Guard Tone is a configurable parameter that is used by some makes of comparators. This is a radio-wide feature.

NOTICE:
This feature is disabled if the Wire Mode feature is set to 2 Wire.

This feature is applicable to MTR3000 base radio/repeater and SLR Series repeaters only.

3.8.6.13 Repeater Fallback Timer (ms)

Specifies the allowed time delay from CSQ (Carrier Squelch Qualifier) to PTT before the wireline board enters repeater fallback mode.

When this timer expires, the station is forced into the repeater mode if a PTT is not received from the voting comparator within the selected time of a valid receive qualifier. This is a failsafe if the link between the comparator and the transmitting radio has been compromised. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
10000 ms	0 ms (Disabled)	10 ms

NOTICE:
This feature is disabled if the Wire Mode feature is set to 2 Wire.

This feature can override the Disable Repeat Path feature. For example, when this feature is enabled and fallback occurs, the repeater will repeat eventhough the Disable Repeat Path is enabled.

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3.8.6.14 RX Squelch Mode

Determines the receive qualifier(s) that must be met in order to interrupt the generation of the Status Tone and the allowance of the RX Guard Tone generation.

This is a radio-wide feature.

Always
No checking of the radio receiver squelch is done and the comparator will always interrupt the generation of Status Tone and allowance of RX guard tone generation of the radio.

Carrier
Checks if the radio receiver squelch is Carrier squelch type in order to interrupt the generation of the Status Tone and the allowance of the RX Guard Tone generation of the radio.

Carrier or PL/DPL
Checks if the radio receiver squelch is Carrier, PL or DPL squelch type in order to interrupt the generation of the Status Tone and the allowance of the RX Guard Tone generation of the radio.

Carrier and PL/DPL
Checks if the radio receiver squelch must be Carrier and PL or Carrier and DPL squelch type in order to interrupt the generation of the Status Tone and the allowance of the RX Guard Tone generation of the radio.

NOTICE:
This features is disabled if the Wire Mode feature is set to 2 Wire.

This feature is applicable to MTR3000 base radio/repeater and SLR Series repeaters only.

3.8.6.15
Scan Mode

This list allows you to set the scan rate for the Bluetooth Low Energy (BLE).

If you select **Aggressive**, the radio performs BLE scan at a five seconds rate. If you select **Normal**, the radio performs BLE scan at a 15 seconds rate which provides an exchange between scan frequency and power consumption.

3.8.7
Wireline 2 (Accessories)

The **Wireline 2** section of the Accessories set contains the following fields:

3.8.7.1
Remote Control Mode

Sets the type of remote control method that the wireline uses to decode the function signals from the console.

This is a radio-wide feature.

TRC7
Allows seven different channels to be selected, as well as the monitor function and three wild card GPIOs. This option also causes the Revert Channel list to contain only None and the first seven channels sorted by position.

TRC15
Allows 15 different channels to be selected, as well as the monitor function. This option also causes the Revert Channel list to contain only None and the first 15 channels sorted by position.

DC
Allows five different channels to selected, as well as the monitor function. This option also causes the Revert Channel list to contain only None and the first five channels sorted by position.

None
Disables all remote control functions, though the transmit and receive audio paths are still supported via the wireline.

NOTICE:
The HLGT ALC Mode, TX Guard Tone, Monitor Mode, PTT Dropout Timer (ms), and Revert Channel features are disabled when this feature is set to None.

The HLGT ALC Mode and TX Guard Tone features are disabled when this feature is set to DC.

This feature is applicable to MTR3000 base radio/repeater only.

3.8.7.2 Wire Mode

Sets the wireline interface for either a 2-wire mode or 4-wire mode operation.

This is a radio-wide feature.

2 Wire
The console audio to and from the radio shares a single pair of conductors which interface to the radio at Line 2 of the J6 backplane connector.

4 Wire
The console sends transmitter audio to the radio via a dedicated pair of conductors to Line 1 of the radio, while receive audio from Line 2 of the radio will be sent to the console on a separate dedicated pair of conductors.

NOTICE: The RX Squelch Mode, Status Tone, RX Guard Tone, and Repeater Fallback Timer features are disabled when this feature is set to 2 Wire.

3.8.7.3 Line Impedance

Sets the wireline RX audio (output) and TX audio (input) impedance of the wireline board.

The impedance of the wireline board must be set to match that of the backhaul interface. The Line Impedance is based on the country or region. This is a radio-wide feature.

600 Ohm
For Argentina, Canada, Chile, Columbia, Ecuador, El Salvador, Guam, Hong Kong, India, Indonesia, Japan, Jordan, Kazakhstan, Kuwait, Macao, Malaysia, Mexico, Oman, Pakistan, Peru, Philippines, Russia, Saudi Arabia, Singapore, South Korea, Taiwan, Thailand, UAE, USA and Yemen.

270 Ohm + (150 nF || 750 Ohm)
For Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Bahrain, Croatia, Cyprus, Czech Republic, Egypt, Hungary, Israel, Latvia, Lebanon, Malta, Morocco, Nigeria, Poland, Romania, Slovakia and Slovenia.

220 Ohm + (115 nF || 820 Ohm)
For Australia, Bulgaria and South Africa.

370 Ohm + (310 nF || 620 Ohm)
For New Zealand.

900 Ohm
For Brazil.

320 Ohm + (230 nF || 1050 Ohm)
For United Kingdom.

200 Ohm + (100 nF || 680 Ohm)
For China.

900 Ohm || 30 nF
For legacy MTR2000.

NOTICE:
This feature is applicable to MTR3000 base radio/repeater only.

3.8.7.4 TX Guard Tone

Sets the guard tone frequency detector and notch on the transmit path of the wireline to either Disabled, 2100 Hz, 2175 Hz or 2325 Hz.

When 2-wire or 4-wire tone remote control is desired (TRC7 or TRC15), the wireline guard tone frequency must be set to the same guard tone frequency as generated by the console or deskset. If the tone remote control is not used, it is recommended to set the guard tone frequency to Disabled for full spectrum audio. This is a radio-wide feature.

NOTICE:
This feature is disabled if the Remote Control Mode feature is set to None or DC.

This feature is applicable to MTR3000 base radio/repeater and SLR Series repeaters only.

3.8.7.5 PTT Dropout Timer (ms)

Specifies the allowed hold over time after the loss of low level guard tone (LLGT) or DC current before the station dekeys.

This timer allows for momentary LLGT or DC current loss without dekeying the station. LLGT is a tone generated by the console or deskset which signals the wireline to issue a push to talk (PTT) to the station. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
2000 ms	20 ms	1 ms

NOTICE:
This feature is disabled if the Remote Control Mode feature is set to None.

3.8.7.6 Monitor Mode

Defines the behavior of the Monitor function as either latching or momentary.

This is a radio-wide feature.

Latching
The monitor function is asserted until the next remote control sequence is sent via the console or deskset.

Momentary
The monitor function is asserted for four seconds.

NOTICE: This feature is disabled if the Remote Control Mode feature is set to None.

3.8.7.7

Squelch Hysteresis (dB)

Determines how much the level of the transmitter audio must drop below the squelch threshold before the squelch closes.

This parameter aids in minimizing squelch chatter. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
6 dB	0 dB	1 dB

3.8.7.8

HLGT ALC Mode

Allows the user to enable or disable the High Level Guard Tone Automatic Level Control (HLGT ALC) Mode.

If enabled, the radio automatically adjusts the transmit audio up to -4/+6dB to compensate for changes in the line levels. This adjustment is made when HLGT is detected. This is a radio-wide feature.

NOTICE: This feature is disabled if the Remote Control Mode feature is set to None or DC.

3.8.7.9

Status Tone

Allows the user to enable or disable the Wireline Status Tone.

When enabled, a Status Tone of 2175Hz will be sent to the voting comparator to indicate that the receiver is squelched. When the receiver unsquelches, the audio which is absent of Status Tone, is sent to the voting comparator to be voted. This is a radio-wide feature.

NOTICE:
This feature is disabled if the Wire Mode feature is set to 2 Wire.

This feature is applicable to MTR3000 base radio/repeater and SLR Series repeaters only.

3.8.7.10

RX Guard Tone

Allows the user to enable or disable the Wireline Receive Guard Tone.

When enabled, a Guard Tone of 1950Hz, along with the audio, is supplied to the voting comparator once the receive qualifier has been met. The RX Guard Tone is a configurable parameter that is used by some makes of comparators. This is a radio-wide feature.

NOTICE:
This feature is disabled if the Wire Mode feature is set to 2 Wire.

This feature is applicable to MTR3000 base radio/repeater and SLR Series repeaters only.

3.8.7.11

Repeater Fallback Timer (ms)

Specifies the allowed time delay from CSQ (Carrier Squelch Qualifier) to PTT before the wireline board enters repeater fallback mode.

When this timer expires, the station is forced into the repeater mode if a PTT is not received from the voting comparator within the selected time of a valid receive qualifier. This is a failsafe if the link

between the comparator and the transmitting radio has been compromised. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
10000 ms	0 ms (Disabled)	10 ms

NOTICE:
This feature is disabled if the Wire Mode feature is set to 2 Wire.

This feature can override the Disable Repeat Path feature. For example, when this feature is enabled and fallback occurs, the repeater will repeat eventhough the Disable Repeat Path is enabled.

.

3.8.7.12 RX Squelch Mode

Determines the receive qualifier(s) that must be met in order to interrupt the generation of the Status Tone and the allowance of the RX Guard Tone generation.

This is a radio-wide feature.

Always
No checking of the radio receiver squelch is done and the comparator will always interrupt the generation of Status Tone and allowance of RX guard tone generation of the radio.

Carrier
Checks if the radio receiver squelch is Carrier squelch type in order to interrupt the generation of the Status Tone and the allowance of the RX Guard Tone generation of the radio.

Carrier or PL/DPL
Checks if the radio receiver squelch is Carrier, PL or DPL squelch type in order to interrupt the generation of the Status Tone and the allowance of the RX Guard Tone generation of the radio.

Carrier and PL/DPL
Checks if the radio receiver squelch must be Carrier and PL or Carrier and DPL squelch type in order to interrupt the generation of the Status Tone and the allowance of the RX Guard Tone generation of the radio.

NOTICE:
This features is disabled if the Wire Mode feature is set to 2 Wire.

This feature is applicable to MTR3000 base radio/repeater and SLR Series repeaters only.

3.8.7.13 TX Guard Tone Notch

This check box enables the notch filter at TX Guard tone frequency.

3.8.7.14 RX Status Tone Notch

This check box enables the notch filter at Rx Status tone frequency.

3.8.8 Multi-Button PTT (Accessories)

The **Multi-Button PTT** section of the Accessories set contains the following fields:

3.8.8.1
Index 1 Zone (Multi-Button PTT)

Allows the user to specify which personality to be used when the Multi-Button PTT GPIO pin combination corresponding to Index 1 is triggered.

3.8.8.2
Index 1 (Multi-Button PTT)

This drop-down list allows the user to specify which personality to use when the Multi-Button PTT GPIO pin combination corresponding to Index 1 is triggered.

Valid choices are None and all digital personalities that are not RX only, do not have Dual Capacity Direct Mode enabled, do not have IP Site Connect enabled, and do not have a scan list selected.

NOTICE:
This drop-down list is hidden when the Multi-Button PTT feature is disabled.

Digital personalities are only valid choices if they are not RX only, do not have Dual Capacity Direct Mode enabled, do not have IP Site Connect enabled, and do not have a scan list selected.

3.8.8.3
Index 2 Zone (Multi-Button PTT)

Allows the user to specify which personality to be used when the Multi-Button PTT GPIO pin combination corresponding to Index 2 is triggered

3.8.8.4
Index 2 (Multi-Button PTT)

This drop-down list allows the user to specify which personality to use when the Multi-Button PTT GPIO pin combination corresponding to Index 2 is triggered.

Valid choices are None and all digital personalities that are not RX only, do not have Dual Capacity Direct Mode enabled, do not have IP Site Connect enabled, and do not have a scan list selected.

NOTICE:
This drop-down list is hidden when the Multi-Button PTT feature is disabled.

Digital personalities are only valid choices if they are not RX only, do not have Dual Capacity Direct Mode enabled, do not have IP Site Connect enabled, and do not have a scan list selected.

3.8.8.5
Index 3 Zone (Multi-Button PTT)

Allows the user to specify which personality to be used when the Multi-Button PTT GPIO pin combination corresponding to Index 3 is triggered.

3.8.8.6
Index 3 (Multi-Button PTT)

This drop-down list allows the user to specify which personality to use when the Multi-Button PTT GPIO pin combination corresponding to Index 3 is triggered.

Valid choices are None and all digital personalities that are not RX only, do not have Dual Capacity Direct Mode enabled, do not have IP Site Connect enabled, and do not have a scan list selected.

NOTICE:
This drop-down list is hidden when the Multi-Button PTT feature is disabled.

Digital personalities are only valid choices if they are not RX only, do not have Dual Capacity Direct Mode enabled, do not have IP Site Connect enabled, and do not have a scan list selected.

3.8.8.7
Index 4 Zone (Multi-Button PTT)

Allows the user to specify which personality to be used when the Multi-Button PTT GPIO pin combination corresponding to Index 4 is triggered.

3.8.8.8
Index 4 (Multi-Button PTT)

This drop-down list allows the user to specify which personality to use when the Multi-Button PTT GPIO pin combination corresponding to Index 4 is triggered.

Valid choices are None and all digital personalities that are not RX only, do not have Dual Capacity Direct Mode enabled, do not have IP Site Connect enabled, and do not have a scan list selected.

NOTICE:
This drop-down list is hidden when the Multi-Button PTT feature is disabled.

Digital personalities are only valid choices if they are not RX only, do not have Dual Capacity Direct Mode enabled, do not have IP Site Connect enabled, and do not have a scan list selected.

3.8.8.9
Index 5 Zone (Multi-Button PTT)

Allows the user to specify which personality to be used when the Multi-Button PTT GPIO pin combination corresponding to Index 5 is triggered.

3.8.8.10
Index 5 (Multi-Button PTT)

This drop-down list allows the user to specify which personality to use when the Multi-Button PTT GPIO pin combination corresponding to Index 5 is triggered.

Valid choices are None and all digital personalities that are not RX only, do not have Dual Capacity Direct Mode enabled, do not have IP Site Connect enabled, and do not have a scan list selected.

NOTICE:
This drop-down list is hidden when the Multi-Button PTT feature is disabled.

Digital personalities are only valid choices if they are not RX only, do not have Dual Capacity Direct Mode enabled, do not have IP Site Connect enabled, and do not have a scan list selected.

3.8.8.11
Index 6 Zone (Multi-Button PTT)

Allows the user to specify which personality to be used when the Multi-Button PTT GPIO pin combination corresponding to Index 6 is triggered.

3.8.8.12
Index 6 (Multi-Button PTT)

This drop-down list allows the user to specify which personality to use when the Multi-Button PTT GPIO pin combination corresponding to Index 6 is triggered.

Valid choices are None and all digital personalities that are not RX only, do not have Dual Capacity Direct Mode enabled, do not have IP Site Connect enabled, and do not have a scan list selected.

NOTICE:
This drop-down list is hidden when the Multi-Button PTT feature is disabled.

Digital personalities are only valid choices if they are not RX only, do not have Dual Capacity Direct Mode enabled, do not have IP Site Connect enabled, and do not have a scan list selected.

3.8.8.13
Index 7 (Multi-Button PTT)

This drop-down list allows the user to specify which personality to use when the Multi-Button PTT GPIO pin combination corresponding to Index 7 is triggered.

Valid choices are None and all digital personalities that are not RX only, do not have Dual Capacity Direct Mode enabled, do not have IP Site Connect enabled, and do not have a scan list selected.

NOTICE:
This drop-down list is hidden when the Multi-Button PTT feature is disabled.

Digital personalities are only valid choices if they are not RX only, do not have Dual Capacity Direct Mode enabled, do not have IP Site Connect enabled, and do not have a scan list selected.

3.8.8.14
Index 7 Zone (Multi-Button PTT)

Allows the user to specify which personality to be used when the Multi-Button PTT GPIO pin combination corresponding to Index 7 is triggered.

3.8.9
Wireline TRC (Accessories)

The **Wireline TRC** section of the Accessories set contains the following fields:

3.8.9.1
TX Guard Tone Notch

This check box enables the notch filter at TX Guard tone frequency.

3.8.9.2
RX Status Tone Notch

This check box enables the notch filter at Rx Status tone frequency.

3.8.9.3
Antenna Relay

This check box enables the optional antenna relay.

3.8.10
Wireline TRC Function Selection (Accessories)

The **Wireline TRC Function Selection** section of the Accessories set contains the following fields:

3.8.10.1
TRC7 Frequency 1

This drop-down list allows the user to assign a function tone to the selected TRC7 frequency.

The following function tone selections are supported:

- Activate Repeater Disable
- Activate Repeater Knockdown
- Activate TX PL Inhibit
- Activate TX Power Level High
- Deactivate Repeater Disable
- Deactivate Repeater Knockdown
- Deactivate TX PL Inhibit
- Deactivate TX Power Level High
- Monitor
- Not Used
- Reset
- Select Channel 1 – 7

NOTICE:
The TRC7 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC7**.

3.8.10.2
TRC7 Frequency 2

This drop-down list allows the user to assign a function tone to the selected TRC7 frequency.

The following function tone selections are supported:

- Activate Repeater Disable
- Activate Repeater Knockdown
- Activate TX PL Inhibit
- Activate TX Power Level High
- Deactivate Repeater Disable
- Deactivate Repeater Knockdown
- Deactivate TX PL Inhibit
- Deactivate TX Power Level High
- Monitor
- Not Used
- Reset

- Select Channel 1 – 7

NOTICE:
The TRC7 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC7**.

3.8.10.3 TRC7 Frequency 3

This drop-down list allows the user to assign a function tone to the selected TRC7 frequency.

The following function tone selections are supported:

- Activate Repeater Disable
- Activate Repeater Knockdown
- Activate TX PL Inhibit
- Activate TX Power Level High
- Deactivate Repeater Disable
- Deactivate Repeater Knockdown
- Deactivate TX PL Inhibit
- Deactivate TX Power Level High
- Monitor
- Not Used
- Reset
- Select Channel 1 – 7

NOTICE:
The TRC7 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC7**.

3.8.10.4 TRC7 Frequency 4

This drop-down list allows the user to assign a function tone to the selected TRC7 frequency.

The following function tone selections are supported:

- Activate Repeater Disable
- Activate Repeater Knockdown
- Activate TX PL Inhibit
- Activate TX Power Level High
- Deactivate Repeater Disable
- Deactivate Repeater Knockdown
- Deactivate TX PL Inhibit
- Deactivate TX Power Level High
- Monitor
- Not Used
- Reset

- Select Channel 1 – 7

NOTICE:
The TRC7 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC7**.

3.8.10.5 TRC7 Frequency 5

This drop-down list allows the user to assign a function tone to the selected TRC7 frequency.

The following function tone selections are supported:

- Activate Repeater Disable
- Activate Repeater Knockdown
- Activate TX PL Inhibit
- Activate TX Power Level High
- Deactivate Repeater Disable
- Deactivate Repeater Knockdown
- Deactivate TX PL Inhibit
- Deactivate TX Power Level High
- Monitor
- Not Used
- Reset
- Select Channel 1 – 7

NOTICE:
The TRC7 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC7**.

3.8.10.6 TRC7 Frequency 6

This drop-down list allows the user to assign a function tone to the selected TRC7 frequency.

The following function tone selections are supported:

- Activate Repeater Disable
- Activate Repeater Knockdown
- Activate TX PL Inhibit
- Activate TX Power Level High
- Deactivate Repeater Disable
- Deactivate Repeater Knockdown
- Deactivate TX PL Inhibit
- Deactivate TX Power Level High
- Monitor
- Not Used
- Reset

- Select Channel 1 – 7

NOTICE:
The TRC7 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC7**.

3.8.10.7 TRC7 Frequency 7

This drop-down list allows the user to assign a function tone to the selected TRC7 frequency.

The following function tone selections are supported:

- Activate Repeater Disable
- Activate Repeater Knockdown
- Activate TX PL Inhibit
- Activate TX Power Level High
- Deactivate Repeater Disable
- Deactivate Repeater Knockdown
- Deactivate TX PL Inhibit
- Deactivate TX Power Level High
- Monitor
- Not Used
- Reset
- Select Channel 1 – 7

NOTICE:
The TRC7 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC7**.

3.8.10.8 TRC7 Frequency 8

This drop-down list allows the user to assign a function tone to the selected TRC7 frequency.

The following function tone selections are supported:

- Activate Repeater Disable
- Activate Repeater Knockdown
- Activate TX PL Inhibit
- Activate TX Power Level High
- Deactivate Repeater Disable
- Deactivate Repeater Knockdown
- Deactivate TX PL Inhibit
- Deactivate TX Power Level High
- Monitor
- Not Used
- Reset

- Select Channel 1 – 7

NOTICE:
The TRC7 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC7**.

3.8.10.9

TRC7 Frequency 9

This drop-down list allows the user to assign a function tone to the selected TRC7 frequency.

The following function tone selections are supported:

- Activate Repeater Disable
- Activate Repeater Knockdown
- Activate TX PL Inhibit
- Activate TX Power Level High
- Deactivate Repeater Disable
- Deactivate Repeater Knockdown
- Deactivate TX PL Inhibit
- Deactivate TX Power Level High
- Monitor
- Not Used
- Reset
- Select Channel 1 – 7

NOTICE:
The TRC7 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC7**.

3.8.10.10

TRC7 Frequency 10

This drop-down list allows the user to assign a function tone to the selected TRC7 frequency.

The following function tone selections are supported:

- Activate Repeater Disable
- Activate Repeater Knockdown
- Activate TX PL Inhibit
- Activate TX Power Level High
- Deactivate Repeater Disable
- Deactivate Repeater Knockdown
- Deactivate TX PL Inhibit
- Deactivate TX Power Level High
- Monitor
- Not Used
- Reset

- Select Channel 1 – 7

NOTICE:
The TRC7 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC7**.

3.8.10.11
TRC7 Frequency 11

This drop-down list allows the user to assign a function tone to the selected TRC7 frequency.

The following function tone selections are supported:

- Activate Repeater Disable
- Activate Repeater Knockdown
- Activate TX PL Inhibit
- Activate TX Power Level High
- Deactivate Repeater Disable
- Deactivate Repeater Knockdown
- Deactivate TX PL Inhibit
- Deactivate TX Power Level High
- Monitor
- Not Used
- Reset
- Select Channel 1 – 7

NOTICE:
The TRC7 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC7**.

3.8.10.12
TRC7 Frequency 12

This drop-down list allows the user to assign a function tone to the selected TRC7 frequency.

The following function tone selections are supported:

- Activate Repeater Disable
- Activate Repeater Knockdown
- Activate TX PL Inhibit
- Activate TX Power Level High
- Deactivate Repeater Disable
- Deactivate Repeater Knockdown
- Deactivate TX PL Inhibit
- Deactivate TX Power Level High
- Monitor
- Not Used
- Reset

- Select Channel 1 – 7

NOTICE:
The TRC7 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC7**.

3.8.10.13 TRC7 Frequency 13

This drop-down list allows the user to assign a function tone to the selected TRC7 frequency.

The following function tone selections are supported:

- Activate Repeater Disable
- Activate Repeater Knockdown
- Activate TX PL Inhibit
- Activate TX Power Level High
- Deactivate Repeater Disable
- Deactivate Repeater Knockdown
- Deactivate TX PL Inhibit
- Deactivate TX Power Level High
- Monitor
- Not Used
- Reset
- Select Channel 1 – 7

NOTICE:
The TRC7 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC7**.

3.8.10.14 TRC7 Frequency 14

This drop-down list allows the user to assign a function tone to the selected TRC7 frequency.

The following function tone selections are supported:

- Activate Repeater Disable
- Activate Repeater Knockdown
- Activate TX PL Inhibit
- Activate TX Power Level High
- Deactivate Repeater Disable
- Deactivate Repeater Knockdown
- Deactivate TX PL Inhibit
- Deactivate TX Power Level High
- Monitor
- Not Used
- Reset

- Select Channel 1 – 7

NOTICE:
The TRC7 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC7**.

3.8.10.15
TRC7 Frequency 15

This drop-down list allows the user to assign a function tone to the selected TRC7 frequency.

The following function tone selections are supported:

- Activate Repeater Disable
- Activate Repeater Knockdown
- Activate TX PL Inhibit
- Activate TX Power Level High
- Deactivate Repeater Disable
- Deactivate Repeater Knockdown
- Deactivate TX PL Inhibit
- Deactivate TX Power Level High
- Monitor
- Not Used
- Reset
- Select Channel 1 – 7

NOTICE:
The TRC7 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC7**.

3.8.10.16
TRC7 Frequency 16

This drop-down list allows the user to assign a function tone to the selected TRC7 frequency.

The following function tone selections are supported:

- Activate Repeater Disable
- Activate Repeater Knockdown
- Activate TX PL Inhibit
- Activate TX Power Level High
- Deactivate Repeater Disable
- Deactivate Repeater Knockdown
- Deactivate TX PL Inhibit
- Deactivate TX Power Level High
- Monitor
- Not Used
- Reset

- Select Channel 1 – 7

NOTICE:
The TRC7 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC7**.

3.8.10.17
TRC15 Frequency 1

This drop-down list allows the user to assign a function tone to the selected TRC15 frequency.

The following function tone selections are supported:

- Monitor
- Select Channel 1 - 15

NOTICE:
The TRC15 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC15**.

3.8.10.18
TRC15 Frequency 2

This drop-down list allows the user to assign a function tone to the selected TRC15 frequency.

The following function tone selections are supported:

- Monitor
- Select Channel 1 - 15

NOTICE:
The TRC15 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC15**.

3.8.10.19
TRC15 Frequency 3

This drop-down list allows the user to assign a function tone to the selected TRC15 frequency.

The following function tone selections are supported:

- Monitor
- Select Channel 1 - 15

NOTICE:
The TRC15 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC15**.

3.8.10.20
TRC15 Frequency 4

This drop-down list allows the user to assign a function tone to the selected TRC15 frequency.

The following function tone selections are supported:

- Monitor
- Select Channel 1 - 15

NOTICE:
The TRC15 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC15**.

3.8.10.21

TRC15 Frequency 5

This drop-down list allows the user to assign a function tone to the selected TRC15 frequency.

The following function tone selections are supported:

- Monitor
- Select Channel 1 - 15

NOTICE:
The TRC15 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC15**.

3.8.10.22

TRC15 Frequency 6

This drop-down list allows the user to assign a function tone to the selected TRC15 frequency.

The following function tone selections are supported:

- Monitor
- Select Channel 1 - 15

NOTICE:
The TRC15 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC15**.

3.8.10.23

TRC15 Frequency 7

This drop-down list allows the user to assign a function tone to the selected TRC15 frequency.

The following function tone selections are supported:

- Monitor
- Select Channel 1 - 15

NOTICE:
The TRC15 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC15**.

3.8.10.24

TRC15 Frequency 8

This drop-down list allows the user to assign a function tone to the selected TRC15 frequency.

The following function tone selections are supported:

- Monitor
- Select Channel 1 - 15

NOTICE:
The TRC15 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC15**.

3.8.10.25

TRC15 Frequency 9

This drop-down list allows the user to assign a function tone to the selected TRC15 frequency.

The following function tone selections are supported:

- Monitor
- Select Channel 1 - 15

NOTICE:
The TRC15 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC15**.

3.8.10.26
TRC15 Frequency 10

This drop-down list allows the user to assign a function tone to the selected TRC15 frequency.

The following function tone selections are supported:

- Monitor
- Select Channel 1 - 15

NOTICE:
The TRC15 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC15**.

3.8.10.27
TRC15 Frequency 11

This drop-down list allows the user to assign a function tone to the selected TRC15 frequency.

The following function tone selections are supported:

- Monitor
- Select Channel 1 - 15

NOTICE:
The TRC15 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC15**.

3.8.10.28
TRC15 Frequency 12

This drop-down list allows the user to assign a function tone to the selected TRC15 frequency.

The following function tone selections are supported:

- Monitor
- Select Channel 1 - 15

NOTICE:
The TRC15 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC15**.

3.8.10.29
TRC15 Frequency 13

This drop-down list allows the user to assign a function tone to the selected TRC15 frequency.

The following function tone selections are supported:

- Monitor

- Select Channel 1 - 15

NOTICE:
The TRC15 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC15**.

3.8.10.30
TRC15 Frequency 14

This drop-down list allows the user to assign a function tone to the selected TRC15 frequency.

The following function tone selections are supported:

- Monitor
- Select Channel 1 - 15

NOTICE:
The TRC15 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC15**.

3.8.10.31
TRC15 Frequency 15

This drop-down list allows the user to assign a function tone to the selected TRC15 frequency.

The following function tone selections are supported:

- Monitor
- Select Channel 1 - 15

NOTICE:
The TRC15 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC15**.

3.8.10.32
TRC15 Frequency 16

This drop-down list allows the user to assign a function tone to the selected TRC15 frequency.

The following function tone selections are supported:

- Monitor
- Select Channel 1 - 15

NOTICE:
The TRC15 Frequency function selections are available when Remote Control Mode on page 296 is set to **TRC15**.

3.9
Control Buttons Set

The **Control Buttons** set contains features related to the programming buttons on portable or mobile radios.

The following sections contain all the supported fields:

3.9.1
General (Control Buttons)

The **General** section of the Control Buttons set contains the following fields:

3.9.1.1

Numeric Keypad

Configures the keypad modes.

Address
Allows direct entry of Address digits when the radio is in the idle state and is showing the default display.

Channel in All Zones
Allows channel selection in all the zones by entering the channel number via the keypad. This can only be done when the radio is in the idle condition.

Channel in Home Zone
Allows channel selection in current zone by entering the channel number via the keypad. This can only be done when the radio is in the idle condition.

Disabled
No direct entry of channel number, Address or Status digits are allowed when the radio is in the idle state.

Status
Allows direct entry of Status digits when the radio is in the idle state and is showing the default display.

3.9.1.2

Emergency Short Press Duration (ms)

Sets the duration a button assigned to the Emergency feature is required to be pressed (and held down) to activate the radio's Emergency mode operation.

This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
750 ms	50 ms	50 ms

3.9.1.3

Long Press Duration (ms)

Sets the duration a button is required to be pressed (and held down), for it to be interpreted as a long press.

This duration also controls the long press operation of the button assigned to the Emergency feature. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
3750 ms	1000 ms	250 ms

3.9.1.4

Dual Knob Press Duration (ms)

Sets the duration of the knob press before changing the dual knob functionality in milliseconds (ms).

This duration can help to avoid accidental changing of the dual knob functionality. The user needs to press the knob longer than this timer to change the knob functionality.

Range:

Maximum	Minimum	Increment
3750 ms	500 ms	250 ms

3.9.1.5
Channel Up/Down via Knob

Dual knob is the Mobile combined volume and channel knob.

The user can switch between these two functionality by pressing the knob in alternation. Upon power up, the dual knob works as a volume knob. The user can push the knob to change the functionality to a channel selector. When the Channel Up/Down via Knob feature is disabled, the user can only use the knob for volume adjustment. Therefore, ensure that the Channel Up/Channel Down option is assigned to a programmable button.

3.9.1.6
Keypad Lock Options

This feature allows the user to choose ways to lock or unlock the keypad, channel selector knob, or both; depending on the settings.

Lock Keypad
Allows the user to lock the radio keypad or channel selector knob (applicable to Display model only).

Lock Channel Selector Knob
Allows the user to lock the channel selector knob (applicable to Display model only).

Lock Keypad and Channel Selector Knob
Allows the user to lock the radio keypad and channel selector knob (applicable to Display model only).

3.9.2
Conventional Radio Buttons Portable (Control Buttons)

The **Conventional Radio Buttons Portable** section of the Control Buttons set contains the following fields:

3.9.2.1
Orange Button Short Press (Portable)

This field allows you to change the short press functionality of the Orange Button.

NOTICE: The selections that are available depend on the site type and radio model.

Action List
Allow the user to launch the action list and then start the feature or function from the action list.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.2.2
Orange Button Long Press (Portable)

This field allows you to change the long press functionality of the Orange Button.

NOTICE: The selections that are available depend on the site type and radio model.

Action List
Allow the user to launch the action list and then start the feature or function from the action list.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 -One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 -Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.2.3

Side Button 1 Short Press (Portable)

This field allows you to change the short press functionality of the Side Button 1.

NOTICE: The selections that are available depend on the site type and radio model.

Action List
Allow the user to launch the action list and then start the feature or function from the action list.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Battery Type
Allows the user to manually configure the battery type for XiR C1200, XiR C2620, and XiR C2660 radio models.

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.2.4

Side Button 1 Long Press (Portable)

This field allows you to change the long press functionality of the Side Button 1.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Battery Type
Allows the user to manually configure the battery type for XiR C1200, XiR C2620, and XiR C2660 radio models.

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.2.5
Side Button 2 Short Press (Portable)

This field allows you to change the short press functionality of the Side Button 2.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Battery Type
Allows the user to manually configure the battery type for XiR C1200, XiR C2620, and XiR C2660 radio models.

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.2.6
Side Button 2 Long Press (Portable)

This field allows you to change the long press functionality of the Side Button 2.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Battery Type
Allows the user to manually configure the battery type for XiR C1200, XiR C2620, and XiR C2660 radio models.

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.2.7
Side Button 3 Short Press (Portable)

This field allows you to change the short press functionality of the Side Button 3.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level and Flashing Red indicates low battery level (applicable to Non-Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Flexible RX Group List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX Group List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.2.8
Side Button 3 Long Press (Portable)

This field allows you to change the long press functionality of the Side Button 3.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.2.9
P1 Button Short Press (Portable)

Allows the user to change the short press functionality of the programmable P1 Button.

NOTICE: The selections that are available depend on the site type and radio model.

Action List
Allow the user to launch the action list and then start the feature or function from the action list.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Battery Type
Allows the user to manually configure the battery type for XiR C1200, XiR C2620, and XiR C2660 radio models.

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to

be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max

Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.2.10

P1 Button Long Press (Portable)

Allows the user to change the long press functionality of the programmable P1 button.

NOTICE: The selections that are available depend on the site type and radio model.

Action List
Allow the user to launch the action list and then start the feature or function from the action list.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Battery Type
Allows the user to manually configure the battery type for XiR C1200, XiR C2620, and XiR C2660 radio models.

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.2.11
P2 Button Short Press (Portable)

Allows the user to change the short press functionality of the programmable P2 button.

NOTICE: The selections that are available depend on the site type and radio model.

Action List
Allow the user to launch the action list and then start the feature or function from the action list.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Battery Type
Allows the user to manually configure the battery type for XiR C1200, XiR C2620, and XiR C2660 radio models.

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.2.12
P2 Button Long Press (Portable)

Allows the user to change the long press functionality of the programmable P2 button.

NOTICE: The selections that are available depend on the site type and radio model.

Action List
Allow the user to launch the action list and then start the feature or function from the action list.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Battery Type
Allows the user to manually configure the battery type for XiR C1200, XiR C2620, and XiR C2660 radio models.

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.3
Conventional Radio Buttons Mobile (Control Buttons)

The **Conventional Radio Buttons Mobile** section of the Control Buttons set contains the following fields:

3.9.3.1
Front Button 1 Short Press (Mobile)

Allows the user to change the short press functionality of the programmable Front Button 1.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Intensity
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Channel Down
Allows the user to navigate to the previous channel.

Channel Up
Allows the user to navigate to the next channel.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (Analog or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call.

Emergency On
Allows the user to set up an emergency call.

Ext PA On/Off
Allows the user to toggle the audio routing between the connected public address (PA) loudspeaker amplifier and the radios internal public address (PA) system.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Horn & Lights On/Off
Allows the user to toggle the Horn and Lights feature between on or off.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

PA On/Off
Allows the user to control the audio routing by toggling the radio internal public address (PA) system between on or off.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle External PA On/Off
Allows the user to toggle the audio routing from incoming audio or radio microphone to the connected public address (PA) speaker at rear port.

Toggle Internal PA On/Off
Allows the user to toggle the audio routing from radio microphone to the connected public address (PA) speaker at rear port.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhance On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

3.9.3.2

Front Button 1 Long Press (Mobile)

Allows the user to change the long press functionality of the programmable Front Button 1.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Intensity
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Channel Down
Allows the user to navigate to the previous channel.

Channel Up
Allows the user to navigate to the next channel.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (Analog or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call.

Emergency On
Allows the user to set up an emergency call.

Ext PA On/Off
Allows the user to toggle the audio routing between the connected public address (PA) loudspeaker amplifier and the radios internal public address (PA) system.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Horn & Lights On/Off
Allows the user to toggle the Horn and Lights feature between on or off.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

PA On/Off
Allows the user to control the audio routing by toggling the radio internal public address (PA) system between on or off.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle External PA On/Off
Allows the user to toggle the audio routing from incoming audio or radio microphone to the connected public address (PA) speaker at rear port.

Toggle Internal PA On/Off
Allows the user to toggle the audio routing from radio microphone to the connected public address (PA) speaker at rear port.

Toggle PA for Voice Announcement
Allows the user to toggle the Voice Announcement routing between the connected public address (PA) loudspeaker amplifier and the radio public address (PA) system.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

Trill Enhance On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

3.9.3.3

Front Button 2 Short Press (Mobile)

Allows the user to change the short press functionality of the programmable Front Button 2.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Intensity
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Channel Down
Allows the user to navigate to the previous channel.

Channel Up
Allows the user to navigate to the next channel.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (Analog or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call.

Emergency On
Allows the user to set up an emergency call.

Ext PA On/Off
Allows the user to toggle the audio routing between the connected public address (PA) loudspeaker amplifier and the radios internal public address (PA) system.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Horn & Lights On/Off
Allows the user to toggle the Horn and Lights feature between on or off.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

PA On/Off
Allows the user to control the audio routing by toggling the radio internal public address (PA) system between on or off.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle External PA On/Off
Allows the user to toggle the audio routing from incoming audio or radio microphone to the connected public address (PA) speaker at rear port.

Toggle Internal PA On/Off
Allows the user to toggle the audio routing from radio microphone to the connected public address (PA) speaker at rear port.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhance On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

3.9.3.4
Front Button 2 Long Press (Mobile)

Allows the user to change the long press functionality of the programmable Front Button 2.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Intensity
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Channel Down
Allows the user to navigate to the previous channel.

Channel Up
Allows the user to navigate to the next channel.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (Analog or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call.

Emergency On
Allows the user to set up an emergency call.

Ext PA On/Off
Allows the user to toggle the audio routing between the connected public address (PA) loudspeaker amplifier and the radios internal public address (PA) system.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Horn & Lights On/Off
Allows the user to toggle the Horn and Lights feature between on or off.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

PA On/Off
Allows the user to control the audio routing by toggling the radio internal public address (PA) system between on or off.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle External PA On/Off
Allows the user to toggle the audio routing from incoming audio or radio microphone to the connected public address (PA) speaker at rear port.

Toggle Internal PA On/Off
Allows the user to toggle the audio routing from radio microphone to the connected public address (PA) speaker at rear port.

Toggle PA for Voice Announcement
Allows the user to toggle the Voice Announcement routing between the connected public address (PA) loudspeaker amplifier and the radio public address (PA) system.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

Trill Enhance On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

3.9.3.5
Front Button 3 Short Press (Mobile)

Allows the user to change the short press functionality of the programmable Front Button 3.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Intensity
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Channel Down
Allows the user to navigate to the previous channel.

Channel Up
Allows the user to navigate to the next channel.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (Analog or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call.

Emergency On
Allows the user to set up an emergency call.

Ext PA On/Off
Allows the user to toggle the audio routing between the connected public address (PA) loudspeaker amplifier and the radios internal public address (PA) system.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Horn & Lights On/Off
Allows the user to toggle the Horn and Lights feature between on or off.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

PA On/Off
Allows the user to control the audio routing by toggling the radio internal public address (PA) system between on or off.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for

Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle External PA On/Off
Allows the user to toggle the audio routing from incoming audio or radio microphone to the connected public address (PA) speaker at rear port.

Toggle Internal PA On/Off
Allows the user to toggle the audio routing from radio microphone to the connected public address (PA) speaker at rear port.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhance On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

3.9.3.6
Front Button 3 Long Press (Mobile)

Allows the user to change the long press functionality of the programmable Front Button 3.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Intensity
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Channel Down
Allows the user to navigate to the previous channel.

Channel Up
Allows the user to navigate to the next channel.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (Analog or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call.

Emergency On
Allows the user to set up an emergency call.

Ext PA On/Off
Allows the user to toggle the audio routing between the connected public address (PA) loudspeaker amplifier and the radios internal public address (PA) system.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Horn & Lights On/Off
Allows the user to toggle the Horn and Lights feature between on or off.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

PA On/Off
Allows the user to control the audio routing by toggling the radio internal public address (PA) system between on or off.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle External PA On/Off
Allows the user to toggle the audio routing from incoming audio or radio microphone to the connected public address (PA) speaker at rear port.

Toggle Internal PA On/Off
Allows the user to toggle the audio routing from radio microphone to the connected public address (PA) speaker at rear port.

Toggle PA for Voice Announcement
Allows the user to toggle the Voice Announcement routing between the connected public address (PA) loudspeaker amplifier and the radio public address (PA) system.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

Trill Enhance On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

3.9.3.7
Front Button 4 Short Press (Mobile)

Allows the user to change the short press functionality of the programmable Front Button 4.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Intensity
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Channel Down
Allows the user to navigate to the previous channel.

Channel Up
Allows the user to navigate to the next channel.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (Analog or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call.

Emergency On
Allows the user to set up an emergency call.

Ext PA On/Off
Allows the user to toggle the audio routing between the connected public address (PA) loudspeaker amplifier and the radios internal public address (PA) system.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Horn & Lights On/Off
Allows the user to toggle the Horn and Lights feature between on or off.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

PA On/Off
Allows the user to control the audio routing by toggling the radio internal public address (PA) system between on or off.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle External PA On/Off
Allows the user to toggle the audio routing from incoming audio or radio microphone to the connected public address (PA) speaker at rear port.

Toggle Internal PA On/Off
Allows the user to toggle the audio routing from radio microphone to the connected public address (PA) speaker at rear port.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhance On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

3.9.3.8
Front Button 4 Long Press (Mobile)

Allows the user to change the long press functionality of the programmable Front Button 4.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Intensity
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Channel Down
Allows the user to navigate to the previous channel.

Channel Up
Allows the user to navigate to the next channel.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (Analog or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call.

Emergency On
Allows the user to set up an emergency call.

Ext PA On/Off
Allows the user to toggle the audio routing between the connected public address (PA) loudspeaker amplifier and the radios internal public address (PA) system.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Horn & Lights On/Off
Allows the user to toggle the Horn and Lights feature between on or off.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

PA On/Off
Allows the user to control the audio routing by toggling the radio internal public address (PA) system between on or off.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle External PA On/Off
Allows the user to toggle the audio routing from incoming audio or radio microphone to the connected public address (PA) speaker at rear port.

Toggle Internal PA On/Off
Allows the user to toggle the audio routing from radio microphone to the connected public address (PA) speaker at rear port.

Toggle PA for Voice Announcement
Allows the user to toggle the Voice Announcement routing between the connected public address (PA) loudspeaker amplifier and the radio public address (PA) system.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

Trill Enhance On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE: For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

3.9.4
Conventional Accessory Buttons Portable (Control Buttons)

The **Conventional Accessory Buttons Portable** section of the Control Buttons set contains the following fields:

3.9.4.1
Orange Button Short Press (Portable) (Accessory Button)

This field allows you to change the short press functionality of the programmable Accessory Orange Button.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.4.2
Orange Button Long Press (Portable) (Accessory Button)

This field allows you to change the long press functionality of the programmable Accessory Orange Button.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.4.3
No Dot Button Short Press (Portable) (Accessory Button)

This field allows you to change the short press functionality of the programmable Accessory No Dot Button.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.4.4

No Dot / A Button Long Press (Portable) (Accessory Button)

This field allows you to change the long press functionality of the programmable Accessory No Dot / A Button.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will

unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.4.5
1-Dot Button Long Press (Portable) (Accessory Button)

This field allows you to change the long press functionality of the programmable Accessory 1-Dot Button.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.4.6
1-Dot Button Short Press (Portable) (Accessory Button)

This field allows you to change the short press functionality of the programmable Accessory 1-Dot Button.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.4.7
2-Dot Button Short Press (Portable) (Accessory Button)

This field allows you to change the short press functionality of the programmable Accessory 2-Dot Button.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.4.8

2-Dot Button Long Press (Portable) (Accessory Button)

This field allows you to change the long press functionality of the programmable Accessory 2-Dot Button.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Battery Indicator
Allows the user to check the status of the battery charge via the LED. Solid Green indicates high battery level, Solid Yellow indicates fair battery level, and Flashing Red indicates low battery level (applicable to Non-Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call. This is the recommended option for the Orange Button.

Emergency On
Allows the user to set up an emergency call.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Mandown
Allows the user to toggle the Mandown feature between on or off.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Monitor
Allows the user to toggle the Monitor feature between on or off. The Monitor feature allows the user to monitor a channel. In Analog mode, the user is able to listen to the traffic, i.e. the radio will

unmute to the actual voice or data traffic in process. However, in Digital mode, the user can only check if activity is present before transmitting, i.e. the radio will emit an audible/visual alert if there is activity present, but it will not unmute to the actual voice or data traffic in process. For a channel to be monitored, TX Admit Criteria of the channel should be set to "Always". A channel cannot be monitored if any other value of TX Admit Criteria is selected.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Radio/Accessory Speaker
Allows the user to toggle between the radio speaker and accessory speaker to use the Bluetooth headset.

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle Mic Distortion Control
Allows the user to enable or disable the Mic Distortion Control feature. This feature is applicable in Digital mode only.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Inhibit
Activates the Tx Inhibit feature when the radio senses that the ignition is off. The Tx Inhibit feature prevents the radio from transmitting.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.9.5
Conventional Accessory Buttons Mobile (Control Buttons)

The **Conventional Accessory Buttons Mobile** section of the Control Buttons set contains the following fields:

3.9.5.1
No Dot Button Short Press (Mobile) (Accessory Button)

Allows the user to change the short press functionality of the programmable Accessory No Dot Button.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Intensity
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Channel Down
Allows the user to navigate to the previous channel.

Channel Up
Allows the user to navigate to the next channel.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (Analog or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call.

Emergency On
Allows the user to set up an emergency call.

Ext PA On/Off
Allows the user to toggle the audio routing between the connected public address (PA) loudspeaker amplifier and the radios internal public address (PA) system.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Horn & Lights On/Off
Allows the user to toggle the Horn and Lights feature between on or off.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

PA On/Off
Allows the user to control the audio routing by toggling the radio internal public address (PA) system between on or off.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle External PA On/Off
Allows the user to toggle the audio routing from incoming audio or radio microphone to the connected public address (PA) speaker at rear port.

Toggle Internal PA On/Off
Allows the user to toggle the audio routing from radio microphone to the connected public address (PA) speaker at rear port.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhance On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

3.9.5.2 No Dot / A Button Long Press (Mobile) (Accessory Button)

Allows the user to change the long press functionality of the programmable Accessory No Dot / A Button.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Intensity
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Channel Down
Allows the user to navigate to the previous channel.

Channel Up
Allows the user to navigate to the next channel.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (Analog or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call.

Emergency On
Allows the user to set up an emergency call.

Ext PA On/Off
Allows the user to toggle the audio routing between the connected public address (PA) loudspeaker amplifier and the radios internal public address (PA) system.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Horn & Lights On/Off
Allows the user to toggle the Horn and Lights feature between on or off.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

PA On/Off
Allows the user to control the audio routing by toggling the radio internal public address (PA) system between on or off.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle External PA On/Off
Allows the user to toggle the audio routing from incoming audio or radio microphone to the connected public address (PA) speaker at rear port.

Toggle Internal PA On/Off
Allows the user to toggle the audio routing from radio microphone to the connected public address (PA) speaker at rear port.

Toggle PA for Voice Announcement
Allows the user to toggle the Voice Announcement routing between the connected public address (PA) loudspeaker amplifier and the radio public address (PA) system.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

Trill Enhance On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

3.9.5.3 1-Dot / B Button Short Press (Mobile) (Accessory Button)

Allows the user to change the short press functionality of the programmable Accessory 1-Dot / B Button.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Intensity
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Channel Down
Allows the user to navigate to the previous channel.

Channel Up
Allows the user to navigate to the next channel.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (Analog or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call.

Emergency On
Allows the user to set up an emergency call.

Ext PA On/Off
Allows the user to toggle the audio routing between the connected public address (PA) loudspeaker amplifier and the radios internal public address (PA) system.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Horn & Lights On/Off
Allows the user to toggle the Horn and Lights feature between on or off.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

PA On/Off
Allows the user to control the audio routing by toggling the radio internal public address (PA) system between on or off.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max

Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle External PA On/Off
Allows the user to toggle the audio routing from incoming audio or radio microphone to the connected public address (PA) speaker at rear port.

Toggle Internal PA On/Off
Allows the user to toggle the audio routing from radio microphone to the connected public address (PA) speaker at rear port.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhance On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

3.9.5.4

1-Dot / B Button Long Press (Mobile) (Accessory Button)

Allows the user to change the long press functionality of the programmable Accessory 1-Dot / B Button.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Intensity
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Channel Down
Allows the user to navigate to the previous channel.

Channel Up
Allows the user to navigate to the next channel.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (Analog or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call.

Emergency On
Allows the user to set up an emergency call.

Ext PA On/Off
Allows the user to toggle the audio routing between the connected public address (PA) loudspeaker amplifier and the radios internal public address (PA) system.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Horn & Lights On/Off
Allows the user to toggle the Horn and Lights feature between on or off.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

PA On/Off
Allows the user to control the audio routing by toggling the radio internal public address (PA) system between on or off.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle External PA On/Off
Allows the user to toggle the audio routing from incoming audio or radio microphone to the connected public address (PA) speaker at rear port.

Toggle Internal PA On/Off
Allows the user to toggle the audio routing from radio microphone to the connected public address (PA) speaker at rear port.

Toggle PA for Voice Announcement
Allows the user to toggle the Voice Announcement routing between the connected public address (PA) loudspeaker amplifier and the radio public address (PA) system.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

Trill Enhance On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE: For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

3.9.5.5

2-Dot / C Button Short Press (Mobile) (Accessory Button)

Allows the user to change the short press functionality of the programmable Accessory 2-Dot / C Button.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Intensity
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Channel Down
Allows the user to navigate to the previous channel.

Channel Up
Allows the user to navigate to the next channel.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (Analog or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call.

Emergency On
Allows the user to set up an emergency call.

Ext PA On/Off
Allows the user to toggle the audio routing between the connected public address (PA) loudspeaker amplifier and the radios internal public address (PA) system.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Horn & Lights On/Off
Allows the user to toggle the Horn and Lights feature between on or off.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

PA On/Off
Allows the user to control the audio routing by toggling the radio internal public address (PA) system between on or off.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle External PA On/Off
Allows the user to toggle the audio routing from incoming audio or radio microphone to the connected public address (PA) speaker at rear port.

Toggle Internal PA On/Off
Allows the user to toggle the audio routing from radio microphone to the connected public address (PA) speaker at rear port.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhance On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

3.9.5.6
2-Dot / C Button Long Press (Mobile) (Accessory Button)

Allows the user to change the long press functionality of the programmable Accessory 2-Dot / C Button.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Intensity
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Bluetooth Connect
Allows the user to trigger the start, launch inquiry and connect process for a single remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Disconnect
Allows the user to terminate the current connection with all the connected remote Bluetooth device (applicable to Non-Display or Numeric Display model only).

Bluetooth Discoverable On/Off
Allows the user to set the radio Bluetooth to be discoverable by other device (applicable to Non-Display or Numeric Display model only).

Bluetooth Headset Audio Switch
Allows the user to toggle between using the Bluetooth Headset audio path and the internal radio audio path when the Bluetooth Headset is connected to the radio.

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Forwarding Set/Clear
Allows the user to enable or disable the Call Forward feature, similar to Call Forward (Menu) (available when the 5 Tone feature is enabled in the device).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Channel Down
Allows the user to navigate to the previous channel.

Channel Up
Allows the user to navigate to the next channel.

Confirm
Allows the user to confirm a feature.

Contacts
Allows the user to access the Contacts list (Analog or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Emergency Off
Allows the user to terminate an outgoing emergency call.

Emergency On
Allows the user to set up an emergency call.

Ext PA On/Off
Allows the user to toggle the audio routing between the connected public address (PA) loudspeaker amplifier and the radios internal public address (PA) system.

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

GNSS On/Off
Allows the user to toggle the GNSS feature between on and off.

High/Low Power
Allows the user to toggle between high and low power.

Horn & Lights On/Off
Allows the user to toggle the Horn and Lights feature between on or off.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Notifications
Provides the user direct access to the Notifications list.

Nuisance Delete
Allows the user to temporarily remove an unwanted channel from the scan list, except the Selected Channel. The nuisance deleted channel will be restored into the scan list, for instance, when radio is powered off and back on again.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

One Touch Predefined Talkgroup Call
Allows the user to make a one touch predefined talkgroup call.

Option Board Feature 1 - Option Board Feature 6
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

PA On/Off
Allows the user to control the audio routing by toggling the radio internal public address (PA) system between on or off.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone
Allows the user to select the Phone Number to be transmitted (applicable to Display model only).

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Exit
Allows the user to terminate a phone call (applicable to Non-Display or Numeric Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Status
Allows the user to access either the MDC or 5 Tone Status list of the radio menu (available when the 5 Tone feature is enabled in the device).

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Text Message
Allows the user to access the Text Message menu (applicable to Digital mode, Display model only).

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Call Priority Level
Allows the user to toggle the Call Priority Level between Normal and High for Capacity Max capable radios. This option is enabled for all Capacity Max capable models which have the Capacity Max Advantage or Capacity Max Full options. Priority level toggle is only applicable for the current call. For all subsequent calls, the priority reverts back to the original default priority level.

Toggle External PA On/Off
Allows the user to toggle the audio routing from incoming audio or radio microphone to the connected public address (PA) speaker at rear port.

Toggle Internal PA On/Off
Allows the user to toggle the audio routing from radio microphone to the connected public address (PA) speaker at rear port.

Toggle PA for Voice Announcement
Allows the user to toggle the Voice Announcement routing between the connected public address (PA) loudspeaker amplifier and the radio public address (PA) system.

Toggle Mute On/Off
Allows the user to enable or disable the Mute Mode feature. Motorola Solutions recommends setting this feature in the Long Press button to avoid triggering the Mute Mode by mistake.

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

Trill Enhance On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Wi-Fi Status Announcement
Allows the user to toggle the Wi-Fi status announcement on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

3.9.6
One Touch Access (Control Buttons)

The **One Touch Access** section of the Control Buttons set contains the following fields:

3.9.6.1
One Touch Access

This field allows the user to configure one touch access.

There are 6 rows that can be used to configure one touch access. Each row contains the parameters for a one touch access. Each row can then be assigned to a short or long programmable button press (One Touch Access).

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Digital mode and 3600 Trunking capable radios only.

3.9.6.2 Mode (One Touch Access)

Allows the user to select the operation mode for the call members.

The call members are selected in the Call column, select the MDC status or message in the Call Type column, or set the Home Revert feature.

NOTICE:
The Call, Call Type, and Text Message features are disabled if this feature is set to None or Home Revert.

The 5 Tone Call features are disabled if this feature is set to Home Revert.

The 5 Tone Call in One Touch Access is triggered when the current channel in the radio is a 5 Tone channel. The 5 Tone Call does not depend on any signaling type defined in Mode.

The Channel feature is enabled if this feature is set to Home Revert.

The options for Call are digital calls and None if this feature is set to Digital.

The options for Call are Capacity Plus calls and None if this feature is set to Capacity Plus–Single-Site.

The options for Call are Capacity Max calls and None if this feature is set to Capacity Max.

The options for Call are Phone calls and None if this feature is set to Phone Call.

The options for Call Type are Message and Status if this feature is set to MDC.

In older codeplugs, this feature was known as Call Mode.

3.9.6.3 Channel Zone

Allows the user to select the Home Revert channel for the Mobile from the list of all available Analog and Digital channels.

NOTICE:
This feature is enabled if Mode is set to Home Revert.

3.9.6.4 Channel

Allows the user to select the Home Revert channel for the Mobile from the list of all available Analog and Digital channels.

NOTICE:
This feature is enabled if Mode is set to Home Revert.

3.9.6.5 Call (One Touch Access)

This paragraph is applicable to MOTOTRBO Conventional radios.

This column allows the user to select a call member from all types of digital calls available in the Digital or Capacity Plus set under Contacts, i.e. Private Calls, Group Calls, PC calls, Dispatch Calls, or Phone Calls except All Call. This paragraph is applicable to 3600 Trunking capable radios. This column allows the user to select a call member from all types of calls available in the Phone or Analog folder under Contacts, i.e. Private Calls and Phone Calls.

NOTICE:
For MOTOTRBO Conventional radios, the user chooses the call member first from the Call column and then decides the call member type from the Call Type column. For 3600 Trunking capable radios, the user chooses the call type first from the Call Type column and then decides the call member of the call type from the Call column.

For MOTOTRBO Conventional radios, if the user selects a call of Group type in the Call column, Group Call and Text Message will appear as valid choices in the Call Type column. If a call of Private type is chosen, the user can select Call Alert, Private Call and Text Message in the Call Type column. If a call of PC or Dispatch type is chosen, the user can only select Text Message in the Call Type column.

If a call of Phone type is chosen, the user can select Phone Call in the Call column. The Phone Call option is available only when the Digital feature is enabled in the device.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode and 3600 Trunking capable radios only.

3.9.6.6
Call Type (One Touch Access)

For MOTOTRBO Conventional radios, this feature allows the user to select a call type for the call member that was selected in the Call column.

For 3600 Trunking capable radios, this feature allows the user to select a call type before selecting the call member of the call type or status/message index if the call type is Status or Message.

NOTICE:
For MOTOTRBO Conventional radios, if the user selects a call of Group type in the Call column, Group Call and Text Message will appear as valid choices in the Call Type column. If a call of Private type is chosen, the user can select Call Alert, Private Call and Text Message in the Call Type column. If a call of PC or Dispatch type is chosen, the user can only select Text Message in the Call Type column. If a call of Phone type is chosen, the user can select Phone Call in the Call column.

For MOTOTRBO Conventional radios, the selection for Text Message comes from Text Messages. At least one text message needs to be created in Text Messages to enable the PC or Dispatch Call option in this feature.

For MOTOTRBO Conventional radios, Message comes from MDC Message List and Status comes from MDC Status List.

If Mode (One Touch Access) on page 496 is Capacity Max and the Call Type is Status, the Capacity Max Status List on page 758 and the Capacity Max Status on page 758 are enabled.

If Mode (One Touch Access) on page 496 is Capacity Max, pressing the OTC button configured as `Dynamic TG Replaced` allows the user to initiate a call to the TX Contact of the original talkgroup that the Dynamic Group Number Assignment (DGNA) talkgroup replaced.

For 3600 Trunking capable radios, Message comes from Message Updates and Status comes from Status Updates.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode and 3600 Trunking capable radios only.

3.9.6.7
5 Tone Call (One Touch Access)

This column allows the user to configure a 5 Tone call member from the choices of Call 1, Call 2, Call 3, Call 4, Call 5, Call 6, and None for One Touch Access.

NOTICE:
This feature is disabled if Mode is set to Home Revert.

This feature is supported in Analog mode only.

3.9.6.8
MDC Status/Message Index (One Touch Access)

Selects a status or message index from the available index.

This index is associated to the MDC Status List (16 entries) or MDC Message List list (16 entries).

NOTICE:
This feature is enabled only when Call Type is selected as Status or Message.

This feature is supported in Analog mode only.

3.9.6.9
Text Message (One Touch Access)

Allows the user to select a Quick Text. The selection for these messages comes from Text Messages.

NOTICE:
This feature is available only when Call Type is set to Text Message.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.9.6.10
Trunking Status/Message Index (3600 Trunking Capable Radios)

Selects a status or message index from the available index.

This index is associated to the Status Updates list (8 entries) or Message Updates list (16 entries).

NOTICE:
This feature is enabled only when Call Type is selected as Status or Message.

This feature is supported in Analog mode only.

This feature is applicable to 3600 Trunking capable radios only.

3.9.7
Number Key Quick Contact Access (Control Buttons)

The **Number Key Quick Access** section of the Control Buttons set contains the following fields:

3.9.7.1
Number Key (Number Key Quick Contact Access)

This column represents the keys from "0" to "9" on the numeric keypad.

NOTICE:
This feature is supported in Digital mode only.

3.9.7.2
Mode (Number Key Quick Contact Access)

Allows the user to select the operation mode for the call member selected in the Call column.

NOTICE:
This feature is disabled on the respective Number Key row if set to None.

The Call feature is disabled if this feature is set to None (disabled).

The options for Call are digital calls and None if this feature is set to Digital.

The options for Call are Capacity Plus calls and None if this feature is set to Capacity Plus–Single-Site.

The options for Call are phone calls and None if this feature is set to Phone Call.

The Capacity Plus option is available only when the Capacity Plus–Single-Site feature is enabled in the device.

This feature is supported in Digital mode only.

3.9.7.3
Call (Number Key Quick Contact Access)

This column allows the user to select a call member.

Call member is selected from all types of digital calls available in the Digital or Capacity Plus Set under Contacts (Private Calls, Group Calls, or All Call).

NOTICE:
This feature is hidden when the Digital feature is disabled.

This feature is disabled and set to None if the Mode feature is set to None

This field allows the user to only select all available Digital private calls, group calls, all call, None, and User Defined if the Mode feature is set to Digital.

This field allows the user to only select all available Capacity Plus private calls, group calls, all call, None, and User Defined if the Mode feature is set to Capacity Plus.

This feature is set to None if the Mode feature is changed to a different mode.

This field allows the user to only select all available Phone calls, None, and User Defined if the Mode feature is set to Phone Call.

Notwithstanding Note 3, 4, and #6, the User Defined choice is only applicable when the existing value in the radio on reading is a User Contact type (User Digital, User Capacity Plus, or User Phone Call).

The User Defined choice is removed from the list of choices if the user chooses another choice and then commits the change by moving the focus to another field.

This feature is supported in Digital mode only.

3.9.8
Actions List (Control Buttons)

The **Actions List** section of the Control Buttons set contains the following fields:

3.9.8.1
Index (Actions List)

Displays the number of the job ticket action entries.

NOTICE:
This feature is supported in Digital mode only.

This feature is applicable for SL Series radios.

3.9.8.2
Feature (Action List)

Allows the user to configure a feature from a list of features.

NOTICE: The selections that are available depend on the site type and radio model.

All Alert Tones On/Off
Allows the user to enable or disable all the alert tones simultaneously.

Backlight Auto On/Off
Allows radio display and front panel buttons backlight to illuminate for ease of use in low light areas (applicable to Display model only).

Brightness
Allows the user to adjust the brightness level of the radio display and front panel buttons backlight (not applicable to Portable Non-Display).

Call Alert
Allows a user (radio or dispatcher) to leave a page with another unit which may be a dispatcher or another radio, requesting the busy or unavailable recipient to Call Alert the caller when that recipient becomes available (applicable to Display model only).

Call Log Access
Allows the user to access the call log list to easily reinitiate a call using the listed destination (applicable to Display model only).

Cancel
Allows the user to cancel an ongoing call, if call type is Group Call, then only call initiator can use this button to cancel an ongoing call; if call type is Private Call, then both the call initiator and receiver can use this button to cancel an ongoing call.(applicable to Display model only).

Channel Announcement
Allows the user to playback the predefined zone and channel announcement voice files of the current channel/personality.

Contacts
Allows the user to access the Contacts list (MDC or Digital - depending on the radio's current channel) to make a call or initiate any supplementary call features (applicable to Display model only).

Day/Night Display Toggle
Allows the user to toggle the display scheme between the “Day” and “Night” display scheme (applicable to Display model only).

Flexible RX List
Allows the user to enable or disable a dynamic Rx list. Provides user the flexibility to add or remove talkgroup members.

High/Low Power
Allows the user to toggle between high and low power.

Indoor Location On/Off
Allows the user to toggle the Indoor Location feature between on and off.

Intelligent Audio On/Off
Allows the user to toggle the Intelligent Audio feature between on and off.

Job Tickets
Allows the user to access the Job Tickets menu to respond to the job tickets.

Lock
Allows the user to lock/unlock the radio keypad and/or channel selector knob based on keypad locks setting (applicable to Display model only).

Manual Dial For Private
Provides the user with the flexibility to dial any private number that is unavailable in Contacts (applicable to Digital mode, Display model only).

Manual Site Roam
Allows the user to manually roam to the next available site (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Message
Allows the user to access the Text Message feature in Digital mode and MDC Message feature in Analog mode through the radio menu (applicable to Display model only).

Mic AGC On/Off
Allows the user to enable or disable the internal microphone automatic gain control (AGC) for the analog and digital channel/personality. The AGC function shall not apply to the Bluetooth microphone audio.

Notifications
Provides the user direct access to the Notifications list.

One Touch Access 1 - One Touch Access 6
Allows the user to make a digital Group Call, digital Private Call, Call Alert or send a Quick Text via a One Touch Access (applicable to Digital mode only).

Option Board
Allows the user to toggle a feature offered by the option board between on and off for the channel.

OTAR Rekey Request
Allows the user to request, from the KMF (Key Management Facility), the latest encryption keys for the radio. The radio sends a "Hello" message to the KMF. This message signals the KMF to send a rekey command to the radio with the latest encryption keys.

Permanent Monitor
Permanent Monitor has the same function as Monitor (Portable only), which is to allow the user to monitor the traffic to ensure that there is no activity on it before transmitting. The difference is, for Permanent Monitor, once entered, the radio remains in that mode until a button is pressed again to exit the feature.

Phone Call
Allows the user to access the phone address book (Contacts list) to make a phone call (applicable to Display model, Digital mode only).

Phone Manual Dial
Provides the user with the flexibility to dial any phone numbers (applicable to Display model, Digital mode only).

Privacy On/Off
Allows the user to toggle the Privacy feature between on and off for the channel. This feature is not available on certain radio models. See also Privacy (applicable to Digital mode only).

Radio Check
Allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user (applicable to both Display and Non-Display models).

Radio Disable
Enables a radio to be remotely disabled, thus this feature can be used to block usage of stolen or lost radios (applicable to both Display and Non-Display models).

Radio Enable
Enables a radio to be remotely enabled after it is disabled (applicable to both Display and Non-Display models).

Radio Name
Displays the radio alias on the radio display (applicable to Display model, Digital mode only).

Remote Monitor
Enables the user to remotely activate a radio's microphone and transmitter. A call can be silently set up on this radio without any indication given to the user (applicable to both Display and Non-Display models).

Repeater/Talkaround
Allows the user to toggle between Repeater and Talkaround mode.

Replay Text to Speech Message
Allows the user to activate Text to Speech feature by replaying text to speech messages. This choice is hidden when the Text to Speech feature is disabled.

Reset Home Channel
Allows the user to reset the Home Channel. This option can be assigned to a short or long button press.

Response Inhibit On/Off
Allows the user to toggle the Response Inhibit feature between on or off.

Ring Alert Type
Provides the user direct access to the Ring Alert Type menu.

Scan On/Off
Allows the user to toggle the Scan feature between on or off.

Scrambling Code Toggle
Allows the user to toggle the Scrambling Code feature between 3.39 kHz or 3.29 kHz (applicable to Analog mode only and not available for the NA region).

Scrambling On/Off
Allows the user to toggle the Scrambling feature between on or off (applicable to Analog mode only and not available for the NA region).

Silence Home Channel Reminder
Allows the user to silence the Home Channel Reminder. The user can assign this option to a short or long button press.

Site Alias
Displays the current site that the subscriber radio is on (available when the Capacity Plus–Multi-Site feature is enabled in the device, applicable to Non-Display or Numeric Display model only).

Site Lock On/Off
Allows the user to toggle the Site Lock feature between on and off for the channel (applicable to Digital mode only and when the IP Site Connect feature is enabled in the device).

Switch Speaker
Allows the user to toggle the external audio feature on and off. External Audio re-routes the speaker audio from the attached Accessory to the internal speaker.

Telemetry Button 1 - Telemetry Button 3
Allows the radio to control its own or another radio's GPIO pin's logical voltage level by sending Telemetry commands/messages.

Tight/Normal Squelch
Allows the user to toggle between tight or normal squelch (applicable to Analog mode only).

Toggle AF Suppressor
Allows the user to toggle the AF Suppressor feature between on and off (applicable to Digital mode only).

Toggle Wi-Fi On/Off
Allows the user to toggle the Wi-Fi feature on or off. This feature will not be applicable when the Wi-Fi feature is disabled.

Transmit Inhibit On/Off
Prevents the portable from transmitting when enabled. This feature is primarily used while in hazardous environments.

Trill Enhancement On/Off
Allows the user to toggle the Trill Enhance feature between on and off.

TX Interrupt Remote Dekey
Allows the user to stop an on-going voice call by dekeying the transmitting radio or terminate the repeater call hang time in order to free up the channel. This button can also be used to end a Remote Monitor session.

Unassigned
No feature is assigned to the programmable button.

Vibrate Style
Allow the user to toggle radio vibrate style setting cyclically in short, medium or long style.

Voice Announcement On/Off
Allows the user to toggle the Voice Announcement feature between on and off.

VOX On/Off
Allows the user to toggle the VOX feature between on and off for the channel.

WAVE Channel List
Allows the user to access the WAVE Channel List options (applicable to Display model only. Only available on supported radios.)

WAVE/Radio Toggle
Allows the user to toggle between WAVE Mode and Radio Mode. This feature is not applicable if the Wi-Fi feature is disabled or if radio model does not support WAVE OnCloud feature.

Zone Selection
Allows the user to access the Zone menu to change zone (applicable to Display model only).

Zone Toggle
Allows the user to switch between 2 zones (applicable to Non-Display or Numeric Display model only).

NOTICE:
For the Telemetry feature, the user needs to assign Telemetry Buttons to physical buttons.

Flexible RX List is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.10 Text Messages Set

The **Text Messages** set is used to configure the Text Messaging Services. MOTOTRBO's advanced digital technology supports data applications, including Text Messaging Services, which enables text-

format communication between radios and dispatch systems, between radios and email-addressable devices, and to remote PC clients attached to radios.

The following section contains all the supported fields:

3.10.1
General (Text Messages)

The **General** section of the Text Messages set contains the following fields:

3.10.1.1
Max Length of Message Sent

Allows the user to select the maximum length of message sent..

Choices are 140 and 280.

3.10.1.2
Message

This feature allows a user to enter a message up to a certain number of characters, for example, 140 or 280 depending on the radio models.

Valid characters are alphanumeric, spaces, and special characters. The user can send the text message by assigning a short or long programmable button press (Text Message) or access the Text Messages feature via the Text Messages Menu feature.

NOTICE:
The user can copy and paste text from any other rows. The user can also copy and paste rows. If the selected rows to be copied exceed the rows to be pasted, RM automatically inserts additional rows at the end of the table.

This feature is supported in Digital mode only.

3.11
Telemetry Set

The **Telemetry** set is used to configure auxiliary control.

The following section contains all the supported fields:

3.11.1
General (Telemetry)

The **General** section of the Telemetry set contains the following fields:

3.11.1.1
Feature

Telemetry functions can be triggered by physical button presses, GPIO lines going active or by receiving Telemetry Commands from other radios.

The Feature column identifies which virtual Telemetry Button or VIO is mapped to a particular Telemetry Command. After setting up a Telemetry Feature, it is important to map any virtual Telemetry Buttons to physical Buttons under the Button folder or any Telemetry VIO to physical GPIO lines under the Accessories folder.

NOTICE:
Telemetry VIO 4 and 5 are applicable for Mobiles only.

3.11.1.2

Description

Allows the user to enter a short, 16 character description to help remember the purpose of the particular Telemetry function.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios only.

3.11.1.3

Action

Telemetry functions can either 'send' Commands to other radios or perform functions 'on' receipt of Commands from other radios.

Send Status
This is an Output Command that sends the status of the radio's triggered VIO line (which is the status of the device connected to it) to another radio. The receiving radio will receive the status of triggered VIO line and pass the binary information to the device connected to it. The status will only be sent when the VIO line changes from inactive to active.

Send Status w/ Text
This is an Output Command that is similar to Send Status. In addition, it sends a Text Message which will appear on the receiving radio's screen (applicable to Telemetry VIO only).

None
No output or input function is assigned.

Send Pulse Command
This is an Output Command that sends a Pulse instruction to another radio. It is up to the receiving radio to trap this message and generate the actual Pulse.

On Pulse Command
This is an Input Command, which on receipt of a Pulse instruction from another radio will create a Pulse of the width specified in the Pulse Time column on the specified Telemetry VIO (applicable to Telemetry VIO only).

Send Query Status Command
This is an Output Command that is sent out to request for the status of the VIO lines of another radio (applicable to Telemetry Button only).

Send Toggle Voltage Command
This is an Output Command that sends a Toggle instruction to another radio. It is up to the receiving radio to trap this command and to Toggle the line.

On Toggle Voltage Command
This is an Input Command, which on receipt of an On Toggle Voltage instruction will toggle the pin's voltage control (applicable to Telemetry VIO only).

Send Voltage High Command
This is an Output Command. The radio sends a Voltage High instruction to another radio. It is up to the receiving radio to trap and set the line high.

Send Voltage Low Command
This is an Output Command. The radio sends a Voltage Low instruction to another radio. It is up to the receiving radio to trap and set the line low.

On Voltage High/Low Command
This is an Input Command that traps a Voltage Low or Voltage High instruction from another radio and sets the line to the active state (applicable to Telemetry VIO only).

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios only.

3.11.1.4
Pulse Time

Defines the duration of a pulse on the Virtual Input Output (VIO) pin.

If an On Pulse command is received, the radio generates a pulse of the duration specified.

Range:

Maximum	Minimum	Increment
50000 ms	200 ms	200 ms

NOTICE:
This feature is enabled when the Action is set to On Pulse Command.

3.11.1.5
Mode

Allows the user to select a call mode for the call member selected in the Call column.

NOTICE:
The Call and Text Message features are disabled if this feature is set to None. The Channel feature is disabled also if this feature is set to None.

This feature is supported in Digital mode only.

3.11.1.6
Channel Zone

Configures a revert channel zone for One Touch Telemetry.

The choices are Selected and all available Digital channels. If Selected is configured, the telemetry data messages are sent on the home channel (Digital mode) or voice channel (Capacity Plus–Single-Site mode). Otherwise, the telemetry data messages are sent on the revert channel configured. It is recommended that this revert channel should be a channel from the channel pool instead of a zone.

NOTICE:
The configured channel must not be an Option Board Trunking enabled channel.

This feature is disabled when the Mode feature is set to None.

This feature does not list a channel with RX Only enabled.

This feature is disabled on the Telemetry VIO feature, only applicable to the Telemetry Button feature.

This feature is supported in Digital mode only.

3.11.1.7
Channel

Configures a revert channel for One Touch Telemetry.

The choices are Selected and all available Digital channels. If Selected is configured, the telemetry data messages are sent on the home channel (Digital mode) or voice channel (Capacity Plus–Single-

Site mode). Otherwise, the telemetry data messages are sent on the revert channel configured. It is recommended that this revert channel should be a channel from the channel pool instead of a zone.

NOTICE:
The configured channel must not be an Option Board Trunking enabled channel.

This feature is disabled when the Mode feature is set to None.

This feature does not list a channel with RX Only enabled.

This feature is disabled on the Telemetry VIO feature, only applicable to the Telemetry Button feature.

This feature is supported in Digital mode only.

3.11.1.8
Call

Allows the user to select only PC, Group and Private calls from the Digital or Capacity Plus contacts to send the telemetry command.

The None option may also be selected if no call to another radio is required.

NOTICE:
This feature is disabled when the Action is set to None or in addition for Telemetry VIO pin, when On Pulse Command, On Toggle Voltage Command or On Voltage High/Low Command is selected.

When Action is set to Send Query Status Command, only Private Call from the Digital contact list can be selected as a Digital Call.

This feature is supported in Digital mode only.

3.11.1.9
Target VIO

Defines the Virtual Input Output (VIO) of the target radio for each Command.

On the target radio, the VIO is paired with a physical GPIO pin. The purpose of having this virtual layer is to isolate any dependencies between the initiating radio and target radio so that at any time when the GPIO pins on the target radio are changed, e.g. rewired to a different device, the initiating radio does not have to reprogram its Telemetry configuration to reflect the change. Additionally, the initiating radio will not know what the Target VIO is mapped to on the target radio. Any VIOs may be chosen for each Command. The initiating radio will only control one VIO of each target radio at a time. The None option may also be selected if no target VIO is required.

NOTICE:
This feature is disabled when the Action is set to None or for the case of Telemetry VIO pins, when Action is set to Send Status, Send Status w/ Text, On Pulse Command, On Toggle Voltage Command or On Voltage High/Low Command or for the case of Telemetry Buttons, when Action is set to Send Query Status Command.

3.11.1.10
Text Message

Allows the user to attach a Quick Text message to the Telemetry Send Status with Text command.

NOTICE:
This feature is enabled when the Action is set to Send Status with Text.

The text message will appear if there is at least one Quick Text message in the Text Message table.

Send Status w/ Text is capable of sending 127 characters in one Text Message. Any Quick Text message used with this feature that is longer than 127 characters will be truncated.

This feature is supported in Digital mode only.

3.12
Menu Set

The **Menu** set is used to configure the menu settings for portables and mobiles display models.

The following sections contain all the supported fields:

3.12.1
General (Menu)

The **General** section of the Menu set contains the following fields:

3.12.1.1
Editor Hang Time (sec)

Configures the Editor Hang Time from the choices of **Infinite**, **5**, **10**,**15**,**20**,**25**,**30**,**60**, and **120**.

3.12.1.2
Menu Hang Time (sec)

Sets the amount of time that the radio remains in the menu mode, after which the radio reverts back to the Home screen.

The available choices are 5, 10, 15, 20, 25, 30, 60, 120 sec, and Infinite. If the duration is set to Infinite, the radio remains infinitely in this mode until the user exits the menu manually by pressing the back or home button. This is a radio-wide feature.

NOTICE:
The scan operation is stopped when the radio is in a menu screen.

This feature is supported in MOTOTRBO 2.0 radios.

This feature is available when the radio is a Display model.

3.12.1.3
Text Message (Menu)

Allows the user to access the Text Message feature via the menu.

The user has the ability to check the Inbox, edit messages, send messages or Quick Text.

NOTICE:
This feature is available when the radio is a Display model.

This feature is supported in Digital mode only.

3.12.1.4
Job Tickets Main Name

Sets the title to appear in the job ticket menu in the Portable.

This name will also appear in the radio prompt message when the user long presses the programmable front buttons for the Job Ticket feature. The user may enter up to a maximum of 16 characters. Valid characters are alphanumerics, spaces and special characters.

NOTICE:
This feature is supported in Digital mode only.

3.12.1.5
Job Tickets Short Name

Sets a short alias to appear in the programmable front buttons for the Job Ticket feature.

The user may enter up to a maximum of five characters. Valid characters are alphanumerics, spaces and special characters.

NOTICE:
This feature is supported in Digital mode only.

3.12.1.6
Job Ticket Delete

Enable this check box to allow the user to delete or cancel job tickets with job ticket IDs.

When the user deletes job tickets, the radio is not required to sync the ticket state with the server. The canceled tickets are moved to a folder through the Job Ticket Modify Service.

3.12.1.7
Message (Menu)

Allows the user to access the Message feature via the menu.

Using this menu, the user can view the inbox, sent items, or drafts and send a custom or Quick Text message in Digital mode. In Analog mode, the user can send the Quick Text using the items configured in the MDC Message List and view sent items.

NOTICE:
This feature is available when the radio is a Display model.

3.12.1.8
Wi-Fi

This check box allows the user to enable the WiFi feature for the menu.

3.12.2
Contact (Menu)

The **Contact** section of the Menu set contains the following fields:

3.12.2.1
Call Alert (Menu)

Allows the user to initiate Call Alert via the menu.

Call Alert allows the user to alert another user, requesting that they call back the user (call initiator) when they (recipient) become available. Call Alert can only be received when the channel is free. This

paragraph is applicable to MOTOTRBO Conventional radios. In Digital Mode, the user can only initiate a Call Alert to an individual radio. In Analog mode, the destination ID can be a Private, Group or All Call ID.

NOTICE:
For MOTOTRBO Conventional radios, the Contacts consists of all MDC and Quik-Call II call entries when it is accessed in Analog mode and digital Private Call entries when it is accessed in Digital mode.

This feature is available when the radio is a Display model.

3.12.2.2
Edit (Menu)

Allows the user to edit the status number and entry alias of a 5 Tone Status list entry via the menu.

NOTICE:
This feature is supported in Analog mode for Display model only.

3.12.2.3
Ring Style (Menu)

Allows the user to enable or disable the Ring Style sub menu in the radio.

The Ring Style feature allow the user to change the ring tone for a received Private Call, Dispatch Call, or PC Call.

NOTICE:
This feature is supported in Digital mode only.

3.12.2.4
Text Message Alert (Menu)

Allows the user to enable or disable the Text Message Alert sub menu in the radio.

The Text Message Alert feature allows the user to configure the type of alert tone to be sounded when a text message is received from a specific contact in the Contacts list.

NOTICE:
This feature is supported in Digital mode only.

3.12.2.5
Manual Dial (Menu)

Allows the user to access the Manual Dial capability of the radio via the menu.

Manual Dial allows the user to initiate a call (e.g. Private Call, Call Alert) or request (e.g. Remote Monitor, Radio Check, Radio Disable, Radio Enable) or send Text Messages by keying in the destination ID using the keypad, even if the destination ID is not listed in the Contacts.

NOTICE:
This feature is available when the radio is a Display model.

This feature is supported in Digital mode only.

3.12.2.6

Phone Manual Dial (Menu)

Allows the user to enable or disable the capability of manually dialing a phone number via the radio menu.

NOTICE:
This feature is supported in Digital mode only.

3.12.2.7

Radio Check (Menu)

Allows the user to initiate a Radio Check request from the menu.

Radio check allows a user/console operator to determine if a radio is active in a system without showing any indication to the radio's user.

NOTICE:
Disabling this feature prevents user initiation of this feature from the radio's user interface. It does not prevent the radio from responding to a Radio Check command.

This feature is applicable for Display models only.

3.12.2.8

Remote Monitor (Menu)

Allows the user to initiate a Remote Monitor request to the target radio via the menu.

Upon a successful request, the target radio's microphone and transmitter will be activated to be remotely monitored.

NOTICE:
The destination radio must have Remote Monitor Encode/Decode or Remote Monitor Encode/Decode (MDC System) enabled in the signaling systems folder.

Disabling this feature prevents user initiation of this feature from the radio's user interface. It does not prevent the radio from responding to a Remote Monitor command.

This feature is available for Display models only.

3.12.2.9

Radio Enable (Menu)

Allows the user to initiate the Radio Enable command to the target radio via the menu.

Radio Enable is used to enable a target radio that is disabled (inhibited).

NOTICE:
Disabling this feature prevents user initiation of this feature from the radio's user interface. It does not prevent the radio from responding to a Radio Enable command.

This feature is available for Display models only.

Encode feature is available in Digital mode only.

3.12.2.10

Radio Disable (Menu)

Allows the user to initiate a Radio Disable command to the target radio via the menu.

Upon a successful request, the target radio will disable all its user interfaces (e.g. all LED indicators including Backlight, alert tones, user inputs including PTT except for Volume/On/Off knob on Portable and Power On/Off button on Mobile), ignore Emergency alarms and received data to radio or external

devices, mute received voice to radio or external device and disallow transmission of data or command from the radio or external device. This disables the radio if it is lost or stolen. However, the radio continues to monitor the air interface to enable it to receive the Radio Enable command.

NOTICE:
The target radio must have Radio Disable Encode/Decode enabled in the signaling systems folder.

Disabling this feature prevents user initiation of this feature from the radio's user interface. It does not prevent the radio from responding to a Radio Disable command.

This feature is available for Display models only.

Encode feature is available in Digital mode only.

3.12.2.11
Program Key (Menu)

Allows the user to enable or disable the Program Key menu in the radio.

The Program Key feature allows the user to associate a call to the number buttons on the radio keypad (1-9 and 0). When the user long presses these buttons in the home screen, the associated call entry will be prompted. The supported call types are Group, Private, or All Call calls in Digital or Capacity Plus–Single-Site mode. This is a radio-wide feature.

NOTICE:
This feature is supported in Digital mode only.

This feature is applicable to Display model only.

3.12.3
Scan (Menu)

The **Scan** section of the Menu set contains the following fields:

3.12.3.1
Scan (Menu)

Allows the user to toggle Scan on or off via the menu for the current conventional channel/trunking personality.

Scan allows the radio to search the scan list that is attached to the current channel/personality for an eligible channel/personaliity to receive or unmute.

NOTICE:
During radio operation, if no Scan List is attached to the current channel/personality, the user will not be able to enter the Scan menu.

This feature is available when the radio is a Display model.

3.12.3.2
Edit List (Menu)

Allows the user to edit the Scan List via the menu.

The Edit List allows the user to perform certain actions on the scan list, e.g. view the scan list, change the scan member's priority level, add new scan members to the scan list or delete members from the scan list. Creating a new or deleting an existing scan list is not allowed on the radio.

NOTICE:
This feature is available when the radio is a Display model.

3.12.3.3
Select New List (Menu)

Allows the user to change Scan List or disable the current Scan List via the menu.

3.12.4
TMS (Menu)

The **TMS** section of the Menu set contains the following fields:

3.12.4.1
Status (Menu)

Allows the user to enable or disable the capability to access Status List in the Trunking system via the menu.

When enabled, the radio displays the last acknowledged status. However, if there were no statuses that had been acknowledged, the radio displays the first status on the list. The user can select a status update to send to the dispatcher indicating the current activity of the user, e.g. En Route, At Site or In Repair.

NOTICE:
This feature is applicable to 3600 Trunking capable radios for Display model only.

3.12.4.2
Message (Menu) (3600 Trunking capable radios)

Allows the user to enable or disable the capability to access Message List in the Trunking system via the menu.

When enabled, the radio displays the last acknowledged message. However, if there were no messages that had been acknowledged, the radio displays the first message on the list.

NOTICE:
This feature is applicable to 3600 Trunking capable radios for Display model only.

3.12.5
Flexible RX List (Menu)

The **Flexible RX List** section of the Menu set contains the following fields:

3.12.5.1
Flexible RX Group List (Menu)

Allows the user to enable or disable the capability of configuring the Flexible RX Group List through menu.

NOTICE: This feature is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.12.6
Status (Menu)

The **Status** section of the Menu set contains the following fields:

3.12.6.1
Manual Dial (Menu)

Allows the user to access the Manual Dial capability of the radio via the menu when in the 5 Tone Status list.

The user can initiate a 5 Tone call (e.g. Private Call, Call Alert) or request (e.g. Remote Monitor, Radio Check, Radio Disable, Radio Enable) or send Text Messages by keying in the destination ID using the keypad, even if the destination ID is not listed in the Status list.

NOTICE:
This feature is supported in Analog mode for Display model only.

3.12.6.2
Edit (Menu)

Allows the user to edit the alphanumeric characters on the edit screen.

The user has the ability to add a new entry to the Contacts list or edit an entry within the Contacts list.

NOTICE:
This feature is available when the radio is a Display model.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only and 3600 Trunking capable radios only.

3.12.7
Call Log (Menu)

The **Call Log** section of the Menu set contains the following fields:

3.12.7.1
Incoming Radio (Menu)

Allows the user to track the last received private call and call alert numbers.

The maximum stored number is ten for both type of calls combined. The user accesses the call log via the menu.

NOTICE:
There is no log for received phone call numbers as the phone ID is not known to the radio.

This feature is applicable to 3600 Trunking capable radios for Display model only.

3.12.7.2
Answered (Menu)

Allows the user to track the last ten incoming private calls that the user answered.

The user accesses the call log via the menu. This log also provides a quick way for the user to initiate a private call.

NOTICE:
This feature is applicable to Display model only.

This feature is supported in Digital mode only.

3.12.7.3
Missed (Menu)

Allows the user to track the last ten incoming private calls that the user missed or failed to respond.

The user accesses the call log via the menu. This log also provides a quick way for the user to initiate a private call.

NOTICE:
This feature is applicable to Display model only.

This feature is supported in Digital mode only.

3.12.7.4
Outgoing Radio (Menu)

This paragraph is applicable to MOTOTRBO Conventional radios.

This field allows the user to track the last private call and call alert numbers that the user initiated and provides easy redial access. The maximum stored number is ten for both type of calls combined. The user accesses the call log via the menu. This log also provides a quick way for the user to initiate a private call. This paragraph is applicable to 3600 Trunking capable radios. This field allows the user to track the last 10 private call numbers that the user initiated and provides easy redial access. The user accesses the call log via the menu. This log also provides a quick way for the user to initiate a private call.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Digital mode and 3600 Trunking capable radios for Display model only.

3.12.7.5
Outgoing Phone (Menu)

Allows the user to track the last ten phone call numbers that the user initiated and provides easy redial access.

The user accesses the call log via the menu. This log also provides a quick way for the user to initiate a phone call.

NOTICE:
This feature is applicable to 3600 Trunking capable radios for Display model only.

3.12.8
Utilities (Menu)

The **Utilities** section of the Menu set contains the following fields:

3.12.8.1
Talkaround (Menu)

Allows the user to set the radio in Talkaround mode via the menu.

Talkaround mode is required in the absence of a repeater.

NOTICE:
This feature is available when the radio is a Display model.

3.12.8.2
Tones/Alerts (Menu)

Allows the user to toggle all the tones and alerts on or off via the menu.

NOTICE:
This feature is available when the radio is a Display model.

3.12.8.3
Horn/Lights (Menu)

Allows the user to toggle the horn and lights on or off via the menu.

NOTICE:
This feature is available when the radio is a Display model.

3.12.8.4
Power (Menu)

Allows the user to adjust the radio's transmission power level via the menu.

NOTICE:
This feature is available when the radio is a Display model.

3.12.8.5
Backlight (Menu)

Allows the user to change the Backlight setting via the menu.

NOTICE:
This feature is available when the radio is a Display model.

3.12.8.6
Backlight Timer (Menu)

This check box allows the user to enable or disable the Backlight Timer menu.

When the user enables this check box, the user can set the timer for the Timeout Timer feature in the radio via the menu.

3.12.8.7
Trill Enhancement (Menu)

This check box allows the user to enable or disable the Trill Enhancement sub menu.

The Trill Enhancement filter provides improved encoding of the Alveolar Trill found in some foreign languages.Refer to the MOTOTRBO Experience #14: Trill Enhancement video to view the feature demonstration.

3.12.8.8
Intro Screen (Menu)

Allows the user to enable or disable the Introduction Screen upon radio power up via the menu.

When enabled via the menu, the Radio Name shows as the welcome text when the radio powers up.

NOTICE:
This feature is available when the radio is a Display model.

3.12.8.9
Keypad Lock (Menu)

Allows the user to toggle the keypad lock on or off via the menu.

NOTICE:
This feature is available when the radio is a Display model.

3.12.8.10

TX Inhibit (Menu)

Allows the user to enable or disable the TX Inhibit feature via the menu.

When enabled via the menu, the radio will not be able to transmit, for instance, while in a hazardous environment. An environment is considered hazardous when the power emitted by the radio Power Amplifier (PA) could be sufficient to initiate an explosion or other dangerous reactions.

NOTICE:
This feature is applicable to 3600 Trunking capable radios for Display model only.

3.12.8.11

Facedown Mute (Menu)

Allows the user to enable or disable the Facedown Mute Enable feature via the menu.

NOTICE: This field is only available when Mute Mode is enabled.

3.12.8.12

Mute Timer (Menu)

Allows the user to enable or disable the Mute Timer (hour) feature via the menu.

NOTICE: This field is only available when Mute Mode is enabled.

3.12.8.13

Tx Inhibit (Menu)

Allows the user to enable or disable the Tx Inhibit feature via the menu.

NOTICE: This field is only available when Transmit Inhibit feaute is enabled.

3.12.8.14

LED Indicator (Menu)

Allows the user to toggle the radio's LED indicator on or off via the menu.

NOTICE:
This feature is available when the radio is a Display model.

3.12.8.15

Squelch (Menu)

Allows the user to access the Squelch feature to select between Normal or Tight Squelch via the menu.

NOTICE:
This feature is available when the radio is a Display model.

This feature is supported in Analog mode only.

3.12.8.16

Privacy (Menu)

This field allows the user to toggle the Privacy feature between on and off for the current channel via the menu.

This feature is not available on certain radio models.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Digital mode for Display model only.

3.12.8.17
VOX (Menu)

Allows the user to toggle the VOX (Voice Activated Transmit) feature between on and off for the current channel via the menu.

VOX enables the radio to automatically transmit whenever its microphone on the VOX-capable accessory detects voice. This is a channel-wide feature.

NOTICE:
It is recommended to disable the Talk Permit tone.

This feature is applicable to MOTOTRBO Conventional radios for Display model.

3.12.8.18
Cable Type (Menu)

Allows the user to access the Cable Type feature if they need to select between different connection modes via the menu.

NOTICE:
The options listed in Radio Management for Cable Type may differ slightly from those listed in the radio due to screen ergonomics.

This feature is applicable to MOTOTRBO Conventional radios for Display model.

3.12.8.19
Manual Site Roam (Menu)

This field allows the user to manually roam to the next available site via the menu.

When this feature is used, the radio is triggered to look for the nearest available site by waking up each repeater in the roam list until an available site is found. The Site Search Timer is triggered each time the nearest available site is found. This feature can also be triggered via a short or long programmable button press (Manual Site Roam). The next available site is not necessarily the site with the strongest RSSI value among the members of the Roam List. This is a radio-wide feature.

NOTICE:
For 1.5a+ releases, this feature is hidden when the IP Site Connect and Capacity Plus–Multi-Site features are disabled.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode for Display model only.

3.12.8.20
Site Lock (Menu)

This paragraph is applicable to MOTOTRBO Conventional radios.

This field allows the user to toggle the Site Lock between on and off via the menu. When enabled via the menu, this feature "locks" to the current channel and stops auto-roaming. When disabled, the radio continuously auto-roams to the site with the strongest RSSI value among the members of the Roam List. This is a radio-wide feature. This paragraph is applicable to 3600 Trunking capable radios. This

field allows the user to toggle the Site Lock/Unlock feature between lock and unlock mode in SmartZone operation. This is a radio-wide feature.

NOTICE:
This feature is available when the radio is a Display model.

For 1.5a+ releases, this feature is hidden when the IP Site Connect and Capacity Plus–Multi-Site features are disabled.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only and 3600 Trunking capable radios only.

3.12.8.21
Password and Lock (Menu)

Allows the user to enable or disable the Password Lock menu in the radio.

When this feature is enabled, the user has the ability to toggle the Password and Lock feature between on and off, or update the Password through the radio menu. This is a radio-wide feature.

NOTICE:
This feature is available when the radio is a Display model only.

3.12.8.22
Call Forward (Menu)

Allows the user to enable or disable the Call Forward feature via the menu.

The Call Forward feature allows calls to be forwarded to another radio. When enabled, the call forwarding telegram will be sent for the matched decoder. This feature is used more on mobile radios and it allows the user to leave the vehicle. If the vehicle receives an individual call, it will transmit a telegram to the forwarding radio. This radio will open and assuming both radios have the same PL the call will take place. A radio can also call forward to a pager and alert the user to the call.

NOTICE:
This feature is supported in Analog mode only.

3.12.8.23
Mic Distortion Control (Menu)

Allows the user to enable or disable the Mic Distortion Control feature via the menu.

NOTICE:
This feature is applicable in Digital mode only.

3.12.8.24
AF Suppressor (Menu)

Allows you to enable or disable the AF Suppressor feature through the menu.

Refer to the MOTOTRBO Experience #2: Acoustic Feedback Suppressor video to view the feature demonstration.

3.12.8.25
Mic Gain (Menu)

Allows the user to access the various radio mic gains to change their settings via the menu.

Mic gain defines the amplification of the radio microphone.

3.12.8.26
Edit 5 Tone SUID (Menu)

Allows the user to edit the 5 Tone Radio ID via the menu.

NOTICE:
This feature is supported in Analog mode only.

3.12.8.27
Signaling System (Menu)

Allows the user to modify certain signaling system parameters like Sel Call Encode, Sel Call Decode and PTT ID Type via the menu.

NOTICE:
This feature is supported in Analog mode only.

3.12.8.28
Edit Zone (Menu)

Allows the user to create new zones via the menu.

3.12.8.29
Edit Channel (Menu)

Allows the user to modify certain channel/personality parameters and create new channels via the menu.

3.12.8.30
Radio Button (Menu)

Allows the user to change the assignment of button options to radio buttons via the menu.

3.12.8.31
Accessory Button (Menu)

Allows the user to change the assignment of button options to accessory buttons via the menu.

3.12.8.32
Home Channel

This field allows the user to enable or disable the Home Channel sub menu in the radio.

3.12.8.33
GNSS (Menu)

Allows the user to enable or disable the GNSS feature via the menu.

NOTICE:
This feature is disabled if the GNSS feature is disabled.

This feature is applicable in Digital mode only.

3.12.8.34
Scrambling

Allows the user to enable or disable the Scrambling sub menu.

3.12.8.35
Indoor Location

This field allows the user to detect the location of the radio by communicating with Beacon.

3.13
Security Set

The **Security** set is used to specify Privacy, AES, Restricted Access to System (RAS), and Over-the-Air Programming (OTAP) keys.

The following sections contain all the supported fields:

3.13.1
Fixed Privacy Key Decryption

When this feature is enabled, the privacy key decryption feature in all channels will not be greyed out; allowing the users to enable the fixed Privacy Key Decryption feature in the desired channels.

3.13.2
Ignore Rx Clear Voice/Packet Data

When enabled, all clear signal field on personality will be ignored. automatically.

3.13.3
Privacy (Security)

The **Privacy** section of the Security set contains the following fields:

3.13.3.1
Privacy Type

This feature allows privacy on selected digital channels.

Privacy is a software-based scrambling solution that is not robust, and is only meant to prevent eavesdropping. The signaling and user identification portions of a transmission are not scrambled. Receiving radio(s) must have the same Basic Privacy Key (for Basic Privacy) or the same Key Value and Key ID (for Enhanced Privacy) as the transmitting radio in order to unscramble the privacy-enabled voice call or to receive the privacy-enabled data transmission. Channels may have their privacy enabled or disabled via a short or long programmable button press (Privacy On/Off) or Privacy (Utilities Menu). A radio must have privacy enabled on the channel to transmit a privacy-enabled transmission, but this is not necessary for receiving radio(s). Privacy-enabled channels are still able to receive clear (unscrambled) transmissions. A visual indication appears on all display radios if the channel is privacy-enabled. The radio LED lights up green when transmitting and blinks rapidly when receiving an ongoing privacy-enabled transmission. The same behavior will be observed during scan operations. This is a radio-wide feature. This feature is not available on certain radio models.

None
Radio will not support any privacy feature.

Basic
Basic Privacy is allowed on selected digital channels. Each radio must have one Basic Privacy Key selected from a pre-defined list. Garbled voice is heard on receiving radios with Basic Privacy Keys which do not match that of the radio transmitting a privacy-enabled voice transmission.

Enhanced
Enhanced Privacy is allowed on selected digital channels. Each privacy-enabled channel must have a securely-configured Key Value associated with it. Garbled voice is heard on receiving radios

with Key Values which do not match that of the radio transmitting a privacy-enabled voice transmission. Nothing is heard on the receiving radio if the Key ID of the transmitting radio does not match with all the Key IDs in the list of receiving radios.

NOTICE:
The Privacy, Basic Privacy Key, Privacy Alias, Key Alias, Key ID, Key Value, and Privacy (Utilities Menu) features are disabled if this feature is set to None.

The Privacy Alias, Key Alias, Key ID, and Key Value features are disabled if this feature is set to Basic.

The Basic Privacy Key feature is disabled if this feature is set to Enhanced.

This feature is supported in Digital mode only.

3.13.3.2
Basic Privacy Key

The Basic Privacy Key is the index key that is mapped to a particular encryption value used to scramble and unscramble voice calls and data transmissions on privacy-enabled channels when Privacy Type is set to Basic.

A radio can only have one Basic Privacy Key. Select the Basic Privacy Key from the list of 255 index keys. The values mapped to each index key provide strong scrambling protection. For security reasons, if the codeplug is read from a radio, its Basic Privacy Key is shown as blank. Receiving radio(s) must have the same Basic Privacy Key as the transmitting radio in order to unscramble the privacy-enabled voice call or to receive the privacy-enabled data transmission. This is a radio-wide feature. This feature is not available on certain radio models.

Range:

Maximum	Minimum	Increment
255	1	1

NOTICE:
This feature is disabled if Privacy Type is set to None or Enhanced.

For security reasons when reading a radio, Basic Privacy Key is shown as blank. Basic Privacy Key needs to be set prior to cloning if the destination radio key needs to be changed.

This feature is supported in Digital mode only.

3.13.3.3
Adding Enhanced Privacy Keys

This feature allows the addition of up to 16 rows that hold the three components that make up an Enhanced Privacy key.

The three components are Key ID, Key Alias, and Key Value. Click on each individual cell to adjust the values.

1 Click the Add button OR right-click a row header and select Add from the drop-down list.

2 A new row will be inserted at the end of the table.

NOTICE:
This feature is disabled if Privacy Type is set to None or Basic.

This feature is supported in Digital mode only.

3.13.3.4
Deleting Enhanced Privacy Keys

Enhanced Privacy Keys may be deleted if they are no longer needed.

1 Click the row header to select the text message to be deleted.

2 Click the Delete button. The highlighted row will be removed from the table.

NOTICE:
This feature is disabled if Privacy Type is set to None or Basic.

This feature is supported in Digital mode only.

3.13.3.5
Key ID

This feature allows a Key ID to be assigned to each Key Value when Privacy Type is set to Enhanced.

The Key ID is an index key that is mapped to the encryption key used for scrambling. Every Key Value can only have one Key ID. Each Key ID must be unique and cannot be a duplicate of another. The Key ID is preserved during cloning a device when Clone Radio Identity is disabled. If the Key ID is out of range, the first available ID will be used. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
255	1	1

NOTICE:
This feature is disabled if Privacy Type is set to None or Basic.

This feature is supported in Digital mode only.

3.13.3.6
Key Alias

This feature provides a 16-character Key Alias to be assigned to a Key ID when Privacy Type is set to Enhanced.

Every Key ID can only have one Key Alias. Each Key Alias must be unique and cannot be a duplicate of another. If duplicate Alias is entered, the value shall be updated to be the previous value and display a message. The Key Alias is preserved during cloning of the device when Clone Radio Identity is disabled.

NOTICE:
This feature is hidden when the Symmetric Keys is disabled.

This feature is supported Digital mode only.

3.13.3.7
Key Value

The Key Value is the encryption value used to scramble and unscramble voice calls and data transmissions on privacy-enabled channels when Privacy Type is set to Enhanced.

Selecting a larger, multiple-digit value provides stronger scrambling protection. Each Key Value can be assigned a Key ID and Key Alias for easier recognition. A radio that has Privacy Type set to Enhanced supports a minimum of 1 to a maximum of 16 Keys. For security reasons, if the codeplug is read from a radio, the Key Value is shown as Ø. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
FFFFFFFFFE	1	1

NOTICE:
This feature is disabled if Privacy Type is set to None or Basic.

For security reasons when reading a radio, Key Value is shown as Ø. Key Value needs to be set prior to cloning if the destination radio key needs to be changed.

When a Report is generated based on a saved archive file, the Key Value will be displayed. It is recommended to set a password on the archive to ensure that only authorized users can view the Key Value within the archive file as well as while generating the Reports.

This feature is supported in Digital mode only.

3.13.4
AES (Security)

The **AES** section of the Security set contains the following fields:

3.13.4.1
Symmetric Keys

This is the container control that displays Key ID, Key Alias, and Key Value fields in the table format.

It allows the user to configure Symmetric Keys.

NOTICE:
User is allowed to add or delete row(s).

This feature is hidden when the Symmetric Keys is disabled.

3.13.4.2
Adding Symmetric Keys

This feature allows the addition of up to 16 rows that hold the three components that make up a Symmetric Key.

The three components are Key ID, Key Alias, and Key Value. Click on each individual cell to adjust the values.

Range:

Maximum	Minimum	Increment
16	0	1

1 Click the Add button OR right-click a row header and select Add from the drop-down list.

2 A new row will be inserted at the end of the table.

NOTICE:
Only applicable to the archives and radios which have the Symmetric Key supported.

When the keys are programmed to the radio, the actual key value shall be un-retrievable from the radio via the application. Key ID and Alias can be read from the radio and displayed in the application.

User can perform Write and Clone operations only if the Key values are not blank.

Key ID, Key Alias, and Key Value are stored in the Radio Management archive.

This feature is supported in Digital mode only.

3.13.4.3
Deleting Symmetric Keys

Allows the user to delete Symmetric Key.

This application shall have at least one key left and this key cannot be deleted.

1 Click the row that contains the key to be deleted.

2 Click the Delete button or right-click and select Add from the drop-down list.

NOTICE:
This feature is supported in Digital mode only.

3.13.4.4
Key ID

This feature allows the user to select a Key ID for Symmetric Keys in decimal format.

The Key ID is an index key that is mapped to the encryption key used for scrambling. Every Key Value can only have one Key ID. Each Key ID must be unique and cannot be a duplicate of another. The Key ID is preserved during cloning a device when Clone Radio Identity is disabled. If the Key ID is out of range, the first available ID will be used. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
255	1	1

NOTICE:
Duplicate IDs shall not be allowed. If duplicate ID is entered, the value shall be updated to be the previous value and display a message.

If the ID is out of range, it shall update the value to be the first available ID.

This feature shall be hidden when the Symmetric Keys is disabled.

This feature is disabled if Privacy Type is set to None or Basic.

This feature is supported in Digital mode only.

3.13.4.5
Key Alias

This field allows the user to select Key Alias for Symmetric Keys.

It provides a 16-character Key Alias to be assigned to a Key ID when Privacy Type is set to Enhanced. Every Key ID can only have one Key Alias. Each Key Alias must be unique and cannot be a duplicate of another. The Key Alias is preserved during cloning of the device when Clone Radio Identity is disabled.

NOTICE:
Duplicate key alias is not allowed. If duplicate key alias is entered, the value shall be updated to be the previous value and display a message.

This feature shall be hidden when the Symmetric Keys is disabled.

This feature is disabled if Privacy Type is set to None or Basic.

This feature is supported Digital mode only.

3.13.4.6
Key Value

This feature allows the user to select Key Value for Symmetric Keys in hexadecimal format.

The Key Value is the encryption value used to scramble and unscramble voice calls and data transmissions on privacy-enabled channels when Privacy Type is set to Enhanced. Selecting a larger, multiple-digit value provides stronger scrambling protection. Each Key Value can be assigned a Key ID and Key Alias for easier recognition. A radio that has Privacy Type set to Enhanced supports a minimum of 1 to a maximum of 16 Keys. For security reasons, if the codeplug is read from a radio, the Key Value is shown as Ø. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
0xF(63)E	1	1

NOTICE:
The field value shall display 0x20e0 symbol when the radio is read.

If the user enters 64F's and leaves this field, the value shall be put to the minimum value. This dependency is only applicable when the existing value is not 0x20e0 symbol.

If this field has a value of 0x20e0 symbol, an error message shall be prompted and the user shall not be allowed to write or clone. If Security Node is not selected in the treeview, it shall go to this node so the user can change the value.

When copy/paste/drag/drop operation is performed on the Security Node, if the value in the source is 0x20e0 symbol, it shall change the value to be 1 in the target archive.

This feature shall be hidden when the Symmetric Keys is disabled.

This feature is disabled if Privacy Type is set to None or Basic.

For security reasons when reading a radio, Key Value is shown as Ø. Key Value needs to be set prior to cloning if the destination radio key needs to be changed.

When a Report is generated based on a saved archive file, the Key Value will be displayed. It is recommended to set a password on the archive to ensure that only authorized users can view the Key Value within the archive file as well as while generating the Reports.

This feature is supported in Digital mode only.

3.13.5
OTAR (Security)

The OTAR section of the Security set contains the following fields:

3.13.5.1
Inactivity TOT (hours)

This field allows the user to set the Inactivity TOT for OTAR.

NOTICE: This field is hidden when the OTAR feature is disabled.

3.13.5.2
Invalid Key Tone

This field allows the user to enable or disable Invalid Key Tone for OTAR.

NOTICE: This field is hidden when the OTAR feature is disabled.

3.13.5.3
UKEK CKR

This field allows the user to view the UKEK CKR for OTAR.

NOTICE:

- This field is not editable.
- This field is hidden when the OTAR feature is disabled.

3.13.5.4
UKEK ID

This field allows the user to view the UKEK ID for OTAR.

NOTICE:

- This field is not editable.
- This field is hidden when the OTAR feature is disabled.

3.13.5.5
UKEK Value

This field allows the user to set the UKEK Value for OTAR.

NOTICE:

- The field value displays 64 asterisks when the radio is read.
- If the user enters a value that contains at least one asterisk, but is not 64 asterisks, the value resets to 64 asterisks.
- If the user enters a value that does not contain at least one asterisk, the UKEK ID field resets to the default value.
- If the user enters a value that is between 1 and 63 characters (inclusive), and the value does not contain any asterisks, the value is preceded with zeroes such that its new length is 64 characters.
- This field is hidden when the OTAR feature is disabled.

3.13.5.6
Active Keyset

This field allows the user to view the Active Keyset for OTAR.

NOTICE:

- This field is not editable.
- This field is hidden when the OTAR feature is disabled.

3.13.6
Restricted Access to System (Security)

The **Restricted Access to System** (RAS) section of the Security set contains the following fields:

3.13.6.1
Authentication (RAS)

Configures the Restricted Access to System (RAS) mode that the system will operate on. RAS is disabled in Connect Plus mode and Capacity Max mode.

Disabled
In this mode, the system only support RAS disabled subscriber radios including the legacy ones.

Enabled
In this mode, the system only supports RAS enabled subscriber radios that use the same RAS ID as the repeaters. RAS is enabled by default.

Migration
In this mode, the system support both RAS enabled subscriber radios and RAS disabled subscriber radios including legacy ones. This mode is recommended to be used only during the migration.

NOTICE:
This feature is only applicable if the Link Type is set to None or Master.

This feature is supported in Digital mode only.

3.13.6.2
Add (RAS Alias)

The Restricted Access to System (RAS) feature provides the capability of preventing invalid subscriber users from using the repeater to transmit in a system.

This includes all the voice, data and signaling transmissions of repeater mode in any system configurations (i.e. Conventional Single Site, IP Site Connect, Capacity Plus–Single-Site, and Capacity Plus–Multi-Site). The first level of protection is via a password-like protection using RAS ID. This button allows the user to add Key Alias and Key Value (i.e. RAS ID) on subscribers. Up to a maximum of 16 RAS IDs can be added.

NOTICE:
Each system uses only one RAS ID.

This feature is supported in Digital mode only.

3.13.6.3
Delete (Restricted Access to System)

Key Alias and Key Value may be deleted if they are no longer in use.

NOTICE:
This feature is supported in Digital mode only.

3.13.6.4
Authentication Key Alias

This feature allows the user to choose the alias that will be used in the application for the RAS Key for this repeater.

Range:

Maximum	Minimum	Increment
1	1	1

NOTICE:
This feature is hidden when the Restricted Access to System feature is disabled.

This feature is only applicable if the Authentication is set to Enabled or Migration.

This feature is only applicable if the Link Type is set to None or Master.

This If the user enters a blank value and leaves this field, the value will be changed to the default value.

This feature is only available for conventional single-site repeaters and intermediary repeaters.

3.13.6.5
Key Alias

Configures an alias for the respective Restricted Access to System (RAS) ID to easily identify the ID.

All radios and repeaters have default RAS Key Alias and Key Value. All digital channels (both initial and added channels) are defaulted to the default keys. The default key is 000000.

NOTICE:
Duplicate Alias is not allowed.

This feature is supported in Digital mode only.

3.13.6.6
Key Value

Configures a Restricted Access to System (RAS) ID on subscribers.

RAS ID is 6-24 unicode characters including 0-9, A-Z, a-z, hyphen'-', underscore'_', dollar '$' and pound '#'.

All radios and repeaters have default RAS Key Alias and Key Value. All digital channels (both initial and added channels) are defaulted to the default keys. The default key is 000000.

NOTICE:
This feature value is reset to the default value if less than six characters are entered.

This feature is supported in Digital mode only.

3.13.6.7
Authentication Key (RAS)

Configures the Restricted Access System (RAS) ID on repeater.

RAS ID is 6-24 unicode characters including 0-9, A-Z, a-z, hyphen'-', underscore'_', dollar '$' and pound '#'.

NOTICE:
This feature is hidden when the Restricted Access to System feature is disabled.

This feature is enabled if Authentication is set to Enabled or Migration.

When Authentication is set to Disabled, the value of this feature changes to default value.

This feature is only applicable if the Link Type is set to None or Master.

This feature is supported in Digital mode only.

This feature displays 0x20e0 symbol when the radio is read.

If the user types a value that is less than six characters and leave this feature, the value changes to the default value.

If this feature displays 0x20e0 symbol, an error message is prompted and the user is not allowed to write or clone. If the Security Node is not selected in the tree view, the field brings the user to this node to enable the user to change the value.

When the user operates copy, paste, drag or drop on the Security Node, and if the source value displays 0x20e0 symbol, the value changes to the default value in the target archive.

When this feature becomes editable and no longer grayed-out, and the previous value is 0x20e0 symbol, the value of this feature changes to the default value.

When writing backward, this feature resets to 0x20e0 symbol.

3.13.6.8
Radio ID Range Check

The Restricted Access to System (RAS) feature provides the capability of preventing invalid subscriber users from using the repeater to transmit in a system.

This includes all the voice, data and signaling transmissions of repeater mode in any system configurations (i.e. Conventional Single Site, IP Site Connect, Capacity Plus–Single-Site, and Capacity Plus–Multi-Site). Besides a password-like protection using RAS ID, the Radio ID Range Check provides additional protection for system access. It allows Radio Management user to configure whether a subscriber radio can use the system's repeaters as specified in the subscriber ID ranges.

NOTICE:
This feature is hidden when the Restricted Access to System feature is disabled.

This feature is only applicable if the Link Type is set to None or Master.

This feature is supported in Digital mode only.

3.13.6.9
Add (Radio ID Range)

Adds a Radio ID range and choose whether or not to allow access to that range.

Up to a maximum of 64 ranges can be added.

NOTICE:
This feature is hidden when the Restricted Access to System feature is disabled.

This feature is enabled when Radio ID Range Check is enabled.

This feature is only applicable if the Link Type is set to None or Master.

This feature is supported in Digital mode only.

3.13.6.10

Delete (Radio ID Range)

Radio ID Ranges may be deleted if they are no longer needed.

NOTICE:
This feature is hidden when the Restricted Access to System feature is disabled.

This feature is enabled when Radio ID Range Check is enabled.

This feature is only applicable if the Link Type is set to None or Master.

This feature is supported in Digital mode only.

3.13.6.11

Min Radio ID

Defines the start value of a range of Radio IDs to be used in the Radio ID Range Check method of system access protection.

Range:

Maximum	Minimum	Increment
16776415	1	1

NOTICE:
This feature is hidden when the Restricted Access to System feature is disabled.

This feature is enabled when Radio ID Range Check is enabled.

This feature is only applicable if the Link Type is set to None or Master.

This feature is supported in Digital mode only.

3.13.6.12

Max Radio ID

Defines the end value of a range of Radio IDs to be used in the Radio ID Range Check method of system access protection.

Range:

Maximum	Minimum	Increment
16776415	1	1

NOTICE:
This feature is hidden when the Restricted Access to System feature is disabled.

This feature is enabled when Radio ID Range Check is enabled.

This feature is only applicable if the Link Type is set to None or Master.

This feature is supported in Digital mode only.

3.13.6.13
Allow

Configures whether or not to allow the given range of Radio IDs to access the system, if the ID checking is enabled.

NOTICE:
This feature is hidden when the Restricted Access to System feature is disabled.

This feature is enabled when Radio ID Range Check is enabled.

This feature is only applicable if the Link Type is set to None or Master.

This feature is supported in Digital mode only.

3.13.7
Over-the-Air Programming (Security)

The Over-the-Air Programming (OTAP) section of the Security set contains the following fields:

3.13.7.1
Authentication Key ID

This field allows the user to select Key ID for Over-the-air Programming.

NOTICE: If the ID is out of range, it the value updates to the first available ID.

3.13.7.2
Authentication Key Value

This field allows the user to select Key Value for Over-the-air Programming.

NOTICE:

- The field value displays a hidden symbol (represented by the symbol 0x20e0) when the radio is read.
- If the user enters 10F's and leaves this field, the value chnages to the 0x20e0 symbol as if is an inavlid value.

3.13.7.3
Authentication Key Alias

This field allows the user to select Key Alias for Over-the-air Programming.

3.13.8
TLS-PSK Authentication (Security)

The transport layer security pre-shared key (TLS-PSK) encryption. Authentication section of the Security set contains the following fields:

3.13.8.1
Security Mode

This field allows the user to select the security mode for a radio as either **Standard** or **Enhanced**. The default value is **Standard**.

When this field is enabled, the user can only read or write the radio codeplug using the TLS-PSK Authentication (Security) on page 532 key alias-key value pair.

When the device is in enhanced mode, the RM 2.0 server and the device must have the same key alias-key value pair. When an authentication error occurs, an error message appears in the Job View on page 143. The reason for the failure is described in the Reason column.

IMPORTANT: After the radio is configured as an enhanced radio, the user cannot use any other applications to read or write the radio without proper key alias-key value pair. It is important not to lose the key.

IMPORTANT: Motorola Solutions recommendsIt is recommended to validate the Pre-Shared Keys in both the configuration and radio before performing a write job.

3.13.8.2
Pre-Shared Key Value

Displays the Pre-Shared Key (PSK) value for the transport layer security pre-shared key (TLS-PSK) Authentication displayed.

A PSK value has 32 hex characters. Authentication key is used with TLS-PSK secure communication.

3.13.8.3
Pre-Shared Key Alias

This field allows the user to select Pre-Shared Key (PSK) Alias for the transport layer security pre-shared key (TLS-PSK) Authentication.

The PSK key alias can contain only the first 128 ASCII characters. Use PSK Alias while security communication initializes.

3.14
Network Set

The **Network** set is used to configure features for interaction with data applications and the MOTOTRBO radio connection.

The following sections contain all the supported fields:

3.14.1
General (Network)

The **General** section of the Network set contains the following fields:

3.14.1.1
USB DNS-SD Interval

This feature list allows the user to enable and disable DNS-SD for the USB interface of the radio. Valid choices include “**Disabled**” and “**90 sec**”.

3.14.2
Radio Network (Network)

The **Radio Network** section of the Network set contains the following fields:

3.14.2.1
CAI Group Network

The Common Air Interface (CAI) standard specifies the type and content of signals transmitted by compliant radios.

A radio based on the CAI standard should be able to communicate with any other CAI radio, regardless of the manufacturer. The CAI Group Network is a value that is combined with the Group ID to produce the group's air interface network IP address. The CAI Group Network ID forms the first or most significant byte of each group's network IP address. All radios must use the same CAI Group Network ID to be able to exchange data. For example, with a Group ID of 2 and a CAI Group Network of 225, the group's air interface network IP address is derived as 225.0.0.2. This feature is primarily used to send data to a group of radios connected to a PC on a wired network. All text messages received by the radios will be passed to the PC if Forward to PC is enabled. The Group Network uniquely identifies the group. Therefore, this IP must match the Group Network IP address of the group that the user intends to communicate with.

Range:

Maximum	Minimum	Increment
239	225	1

NOTICE:
This feature is supported in Digital mode only.

3.14.2.2
Protected Mode Control Station

This feature enables the radio that work as Control Station to transmit and receive using secret CRC/ CRC-CCITT/Checksum.

NOTICE:
This setting is only applicable for Control Station that work on data revert channel in a Capacity Max system.

Range: 0 - 1

Default: 0

3.14.2.3
Max TX PDU Size (bytes)

Allows the user to control the size of packet data units (PDU) sent over-the-air (OTA).

Generally, the user would like a message sent with the least possible data packets, as there is overhead associated with any packet. However, if the data packet is too long and there is interference that causes too many retries that it bogs down the system, the user can try to decrease the packet size. The predefined packet sizes are 300, 500, 750 and 1500 bytes. However, it is recommended that the default value is used.

NOTICE:
The size value should be set greater than the data application's packet size. This is required when the radio is in Capacity Plus–Single-Site mode.

Same size value needs to be set for all radios in the system.

This feature is supported in Digital mode only.

3.14.2.4
Telemetry UDP Port

The User Datagram Protocol (UDP) is one of the core Internet protocol for sending short messages (datagram) between devices.

UDP enables communication between these devices via a unique port number. The Telemetry UDP Port specifies a dedicated port number for the target destination (e.g. computer or radio) to support the Telemetry service. The internal radio Telemetry receive UDP port is always 4008.

Range:

Maximum	Minimum	Increment
65535	1024	1

NOTICE:
The port numbers for the Network Services, e.g. ARS, TMS, Telemetry, etc., must always be different to avoid conflict.

This feature is supported in Digital mode only.

3.14.2.5
Forward to PC

This set allows you to configure Forward to PC feature. When Forward to PC is enabled, the text messages received from the target radio are passed to the connected PC.

This feature is for radios that are configured as control stations attached to application servers, which resides in PC, or to mobile PC clients.

Disabled
The standard IP routing is used. Packets targeted to unconnected networks will be dropped.

Via USB
The Forward to PC routing rules to the USB connection is used.

Via Bluetooth
The Forward to PC routing rules to the Bluetooth connection is used. Only available when the Bluetooth feature is enabled in the radio.

Via Non-IP Peripheral
The Forward to PC routing rules to the non-IP Peripheral connection is used.

NOTICE:
When this feature is enabled, your radio does not display any received text messages, but forwards the messages to the PC.

This feature is supported in MOTOTRBO 2.0 radios.

This feature is supported in Digital mode only.

3.14.3
Services (Network)

The **Services** section of the Network set contains the following fields:

3.14.3.1
ARS Radio ID

The Automatic Registration Service (ARS or also known as Presence Notifier) Radio ID is the ID of the radio that is connected to the ARS server that the user intends to communicate with for data services.

When the radio powers up, it announces its presence by communicating with the ARS server. The server then checks if the radio user is valid and grants access accordingly.

NOTICE:
Users are recommended to assign the ARS Radio IDs of radios acting as control stations to be 16448250 with a Common Air Interface (CAI) Network setting of 12. This allows the air interface network IP of the ARS server to be derived as 13.250.250.250.

This feature is supported in Digital mode only.

3.14.3.2 ARS IP

The Automatic Registration Service (ARS) IP (also known as Presence Notifier IP) is the air interface network IP address of the registration server, that the user intends to communicate with for data services.

When a radio powers up, it announces its presence by communicating with the ARS server. The server will then check if the radio user is valid and grants access accordingly. The ARS IP value is not editable. It is derived from the ARS Radio ID and CAI Network.

NOTICE:
This feature value is set to 0.0.0.0 when the value of ARS Radio ID is blank.

This feature is supported in Digital mode only.

3.14.3.3 ARS UDP Port

The User Datagram Protocol (UDP) is one of the core Internet protocol for sending short messages (datagram) between devices.

UDP enables communication between these devices via a unique port number. The Automatic Registration Service (ARS) UDP Port specifies a dedicated port number for the target destination (e.g. computer or radio) to enable communication between the ARS client and ARS server. It is used to support the radio's automated registration service with the server. The internal radio ARS UDP receive port is always 4005. The configurable ARS UDP port is for destination server receive port only.

Range:

Maximum	Minimum	Increment
65535	1024	1

NOTICE:
The port numbers for the Network Services, e.g. ARS, TMS, Telemetry, etc., must always be different to avoid conflict.

This feature is supported in Digital mode only.

3.14.3.4 TMS Radio ID

The Text Messaging Service (TMS) Radio ID is the ID of the radio that is connected to the TMS server.

It is recommended that the TMS server application be installed on the same server as the Automatic Registration Service (ARS) server application.

NOTICE:
Users are recommended to assign the TMS Radio IDs of radios acting as control stations to be 16448250 with a Common Air Interface (CAI) Network setting of 12. This allows the air interface network IP of the TMS server to be derived as 13.250.250.250. The TMS IP value of any radio that has to communicate with that particular TMS server should then be set to 13.250.250.250.

This feature is supported in Digital mode only.

3.14.3.5
TMS IP

The Text Messaging Service (TMS) IP refers to the air interface network IP address of the TMS server.

It is recommended that the TMS server application be installed on the same server as the Automatic Registration Service (ARS) server application. The TMS IP value is not editable. It is derived from the TMS Radio ID and CAI Network.

NOTICE:
This feature value is set to 0.0.0.0 when the value of TMS Radio ID is blank.

This feature is supported in Digital mode only.

3.14.3.6
TMS UDP Port

The User Datagram Protocol (UDP) is one of the core Internet protocol for sending short messages (datagram) between devices.

UDP enables communication between these devices via a unique port number. The TMS UDP Port specifies a dedicated port number for the target destination (e.g. computer or radio) to support the text messaging service (TMS). The internal radio TMS receive UDP port is always 4007.

Range:

Maximum	Minimum	Increment
65535	1024	1

NOTICE:
The port numbers for the Network Services, e.g. ARS, TMS, Telemetry, etc., must always be different to avoid conflict.

This feature is supported in Digital mode only.

3.14.3.7
User Defined UDP Port 1

This allows the specification of three user-defined UDP ports for use of applications (other than the standard internal applications) that transmit data through the radio.

Radios that have Compressed UDP Data Header enabled can compress the 28 byte UDP/IP header down to 4 bytes if the port number and applications are configured to match among the radios in the system (i.e. all User Defined UDP 1 uses the same port number and accessed by the same application) to improve data transfer throughput. It is recommended to keep the value of this field unique from User Defined UDP 2 and User Defined UDP 3. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment	Disabled
65535	1	1	0

NOTICE:
It is not recommended to use the port numbers reserved for internal applications (4001, 4004, 4005, 4007, 4008, 4061, 4062, 4063, 4066, 4067, 4068, 4069).

The port numbers for the Network Services, e.g. ARS, TMS, Telemetry, etc., must always be different to avoid conflict.

This feature is disabled if the Disabled option is selected.

This feature is supported in Digital mode only.

3.14.3.8
User Defined UDP Port 2

This allows the specification of three user-defined UDP ports for use of applications (other than the standard internal applications) that transmit data through the radio.

Radios that have Compressed UDP Data Header enabled can compress the 28 byte UDP/IP header down to 4 bytes if the port number and applications are configured to match among the radios in the system (i.e. all User Defined UDP 2 uses the same port number and accessed by the same application) to improve data transfer throughput. It is recommended to keep the value of this field unique from User Defined UDP 1 and User Defined UDP 3. This is a radio-wide feature. u

Range:

Maximum	Minimum	Increment	Disabled
65535	1	1	0

NOTICE:
It is not recommended to use the port numbers reserved for internal applications (4001, 4004, 4005, 4007, 4008, 4061, 4062, 4063, 4066, 4067, 4068, 4069).

The port numbers for the Network Services, e.g. ARS, TMS, Telemetry, etc., must always be different to avoid conflict.

This feature is disabled if the Disabled option is selected.

This feature is supported in Digital mode only.

3.14.3.9
User Defined UDP Port 3

This allows the specification of three user-defined UDP ports for use of applications (other than the standard internal applications) that transmit data through the radio.

Radios that have Compressed UDP Data Header enabled can compress the 28 byte UDP/IP header down to 4 bytes if the port number and applications are configured to match among the radios in the system (i.e. all User Defined UDP 3 uses the same port number and accessed by the same application) to improve data transfer throughput. It is recommended to keep the value of this field unique from User Defined UDP 1 and User Defined UDP 2. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment	Disabled
65535	1	1	0

NOTICE:
It is not recommended to use the port numbers reserved for internal applications (4001, 4004, 4005, 4007, 4008, 4061, 4062, 4063, 4066, 4067, 4068, 4069).

The port numbers for the Network Services, e.g. ARS, TMS, Telemetry, etc., must always be different to avoid conflict.

This feature is disabled if the Disabled option is selected.

This feature is supported in Digital mode only.

3.14.3.10 XCMP Server ID

This feature allows the user to configure the XCMP server ID. This is a radio-wide feature.

NOTICE:
Blank value is a valid choice for this control.

This feature is supported in Digital, Capacity Plus–Single-Site and Capacity Plus–Multi-Site mode.

3.14.3.11 XCMP Server IP

This feature allows the user to view the IP address of the XCMP server.

The XCMP server IP Address refers to the air interface network IP address of the XCMP server. This feature is not editable. It is derived from the XCMP Radio ID and CAI Network. This feature defines the XCMP Raw Data destined Server IP Address. This is a radio-wide feature.

NOTICE:
The default value for this feature is set to 0.0.0.0 when the value of XCMP Server ID is blank.

The value in the first octet is always 1+ the value in CAI Network.

The value in the last three octets correspond to the value in XCMP Server ID.

This feature is supported in Digital, Capacity Plus–Single-Site and Capacity Plus–Multi-Site mode.

3.14.3.12 Battery Management Server ID

This configuration allows the user to set the Battery Management server ID.

Range:

Maximum	Minimum	Increment
16776415	1	1

NOTICE:
Blank value is a valid choice for this spin edit.

3.14.3.13
Battery Management Server IP

This edit box allows the user to see the IP address of the Battery Management server.

NOTICE:
This feature is not editable.

The value in this feature must be 0.0.0.0 when the value of Battery Management Server ID is blank.

The value in the first octet shall always be 1 + the value in CAI Network.

The value in the last three octets correspond to the value in Battery Management Server ID.

3.14.3.14
Korea Location Server ID

This field displays the Korea Information Protocol Server ID. The user can type values from 0 to 4294967295.

The value of the Korea Information Protocolserver IP address is calculated from the CAI Network ID and the L2 ID of the Korea Information Protocol server.

NOTICE: The Korea Information Protocol Server ID must be the same address as the control station DMR address if the Korea Information Protocol server connects to the control station. The Korea Information Protocol Server ID must be the same as the MNIS ID if the Korea Information Protocol server connects to MNIS.

3.14.3.15
Korea Location Server IP

This Korea Location Protocol Server IP is a read-only and the value changes according to the Korea Location Protocol Server IP and CAI Network ID values.

3.14.3.16
Sensor Radio ID

This field allows the user to configure Sensor Service ID.

3.14.3.17
Sensor IP

This field shows the Sensor Service IP address. This field is read only.

3.14.3.18
Sensor UDP Port

This field shows Sensor Service UDP port number. This field is read only.

3.14.4
Control Station (Network)

The **Control Station** section of the Network set contains the following fields:

3.14.4.1
Fixed Installation

Allows the user to increase the power of the control station beyond the normal limits for subscriber radios.

Fixed Installation should be checked if the mobile is deployed as part of a 'Fixed Installation' in an R&TTE country.

NOTICE:
This feature is only applicable to certain MOTOTRBO mobile models and in countries that require R&TTE certification.

3.14.4.2
Voice Only

The Voice Only feature, when selected, disables data calls in the radio.

The radio will no longer be able to receive or send Location, Text, Telemetry, etc. The user must NOT select this feature in a radio that is not used as a control station. Even when the radio is used as a control station, the applicability of the feature is limited to certain use case relating to migration of data applications from control station to the MNIS data gateway. For more information on the usage of this feature, refer to the System Planner.

3.14.4.3
Data Modem System Type

The feature allow the user to Enable/Disable Data Modem as it defines which system the Data Modem is.

There are three available options: **None**, **Digital**, and **Capacity Plus**. When **None** is enabled, the radio is not a data modem. If data revert is expected, set this field to **None**. When **Capacity Plus** is enabled, the radio is a Data Revert Control Station working at Capacity Plus mode, when **Digital** is enabled, the radio is a conventional Control Station. This is a radio-wide feature.

NOTICE:
Field radio cannot enable data modem.

If this field is set to **Digital** for subscriber, the radio functions as a control statio. To avoid this instance, set this field to **None**.

The Capacity Plus option is only applicable if the Capacity Plus–Single-Site or Capacity Plus–Multi-Site features are enabled.

This feature is supported in IP Site Connect, Digital, Capacity Plus–Single-Site and Capacity Plus–Multi-Site mode.

3.14.4.4
Data Modem Window Size

The feature allows the user to choose the window size for the data modem.

The choices are 2, 5, 6, 7, 8, 9, and 10. This is a radio-wide feature.

NOTICE:
This feature is greyed-out if Data Modem System Type is set to None.

This feature is supported in IP Site Connect, Digital, Capacity Plus–Single-Site and Capacity Plus–Multi-Site mode.

3.14.4.5

Repeater Latitude (Degree)

This feature defines the latitude of local repeater or control station (direct mode).

Positive means north. Negative means south. This is a radio-wide configuration.

Range:

Maximum	Minimum	Increment
90 degrees	-90 degrees	0.01 degrees

NOTICE:
If the Data Modem System Type is set to None, this field is not editable.

This feature allows blank as a valid value. Therefore, user can leave these values as blanks if the user does not want to use the feature.

3.14.4.6

Repeater Longitude (Degree)

This feature defines the longitude of local repeater or control station (direct mode).

Positive means east. Negative means west. This is a radio-wide configuration.

Range:

Maximum	Minimum	Increment
180 degrees	-180 degrees	0.01 degrees

NOTICE:
If the Data Modem System Type is set to None, this field is not editable.

This feature allows blank as a valid value. Therefore, user can leave these values as blanks if the user does not want to use the feature.

3.14.4.7

ARS Monitoring ID

The Automatic Registration Service (ARS or also known as Presence Notifier) Monitoring ID is the ID of the radio that is connected to the ARS server.

User intends to communicate with the Over-the-Air Programming (OTAP) services through the ARS server. When the radio powers up, it announces its presence by communicating with the ARS server. The server then checks if the radio user is valid and grants access accordingly. The Monitoring ID must not be the same ID as the ARS Radio ID.

Range:

Maximum	Minimum	Increment
16776415	1	1

NOTICE:
Blank value is a valid choice for this feature when not using OTAP in conjunction with ARS.

3.14.4.8

ARS Monitoring IP

The Automatic Registration Service (ARS) IP (also known as Presence Notifier IP) is the air interface network IP address of the registration server.

The registration server is used by the user to communicate with for Over-the-Air Programming (OTAP) services. When a radio powers up, it announces its presence by communicating with the ARS server. The server will then check if the radio user is valid and grants access accordingly. This value is not editable. It is derived from the ARS Monitoring ID and CAI Network.

NOTICE:
The value in the first octet is always 1+ the value in CAI Network.

The value in the last three octets is set based on the value in ARS Monitoring ID.

This feature value is set to 0.0.0.0 when the value of ARS Monitoring ID is blank.

3.14.4.9

Location Server UDP Port

This feature allows the user to configure the User Datagram Protocol (UDP) port of the location server.

When the location packet data decompressed from location CSBK and forward to the PC via USB, the destination UDP port will be set. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
65535	1024	1

NOTICE:
The port numbers for the Network Services, e.g. ARS, TMS, Telemetry, etc., must always be different to avoid conflict.

This feature is supported in Digital, IP Site Connect, Capacity Plus, and Capacity Max modes.

3.14.4.10

XCMP Server UDP Port

This feature allows the user to configure the XCMP Server User Datagram Protocol (UDP) port.

When the XCMP raw data is decompressed from the XCMP device to server CSBK and forwarded to the PC via USB, the destination UDP port will be set.

Range:

Maximum	Minimum	Increment
65535	1024	1

NOTICE:
The port numbers for the Network Services, e.g. ARS, TMS, Telemetry, etc., must always be different to avoid conflict.

This feature is supported in Digital, Capacity Plus–Single-Site, IP Site Connect, and Capacity Plus–Multi-Site mode.

3.14.4.11
Battery Management Server UDP Port

This configuration allows the user to set the UDP port of the Battery Management

Range:

Maximum	Minimum	Increment
65535	1024	1

NOTICE:
The port numbers for the Network Services, e.g. ARS, TMS, Telemetry, etc., must always be different to avoid conflict.

3.14.4.12
Korea Location Server UDP Port

This field allows the user to specify the UDP port settings for the Korea Location Protocol location service. The user can select the range from **1024** through **65535**. The default value is **5017**.

Table 47: Korea Location Protocol Server UDP Port Range

Default	Minimum	Maximum
5017	1024	65535

NOTICE: This field is for control station only.

3.14.5
Network Setting (Network)

The **Network Setting** section of the Network set contains the following fields:

3.14.5.1
DHCP

Dynamic Host Configuration Protocol (DHCP) allows the user to select if the IP address for the multisite repeater is static or dynamic.

This is a radio-wide feature.

NOTICE:
This feature is disabled (unchecked) when Link Type is set to Master.

The Ethernet IP, Gateway IP, and Gateway Netmask features are disabled if this feature is enabled (checked).

The value of this feature is not preserved during cloning and is disabled (unchecked) after any clone operation.

The feature is hidden when the IP Site Connect and the Capacity Plus–Single-Site features are disabled or when the IP Site Connect and the Capacity Plus–Multi-Site features are disabled.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.14.5.2
Ethernet IP

This feature assigns an Ethernet IP Address for a repeater using Link Establishment.

The format and range for the address are (000-255).(000-255).(000-255).(000-255). When DHCP is disabled for the Master, the Master's Ethernet IP is set as the Peer's Master IP in the Link Establishment system. This is a radio-wide feature.

NOTICE:
This feature is disabled when Link Type is set to None.

This feature is disabled when DHCP is enabled (checked).

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.14.5.3
Gateway IP

This feature assigns a Gateway IP Address for a repeater using Link Establishment.

The format and range for the address are (000-255).(000-255).(000-255).(000-255). This is a radio-wide feature.

NOTICE:
This feature is disabled when Link Type is set to None.

This feature is disabled when DHCP is enabled (checked).

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.14.5.4
Gateway Netmask

This feature assigns a Gateway Netmask Address for a repeater using Link Establishment.

This is a radio-wide feature.

NOTICE:
This feature is disabled when Link Type is set to None.

This feature is disabled when DHCP is enabled (checked).

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.14.5.5
Link Speed

This drop-down list allows the user to configure the Ethernet Speed.

The choices are 10 Mbps Full Duplex, 100 Mbps Full Duplex, and Auto Negotiation.

3.14.5.6
DNCP

This check box allows the user to select whether the IP address for this repeater's Ethernet Port is static or dynamic assigned IPv4 address.

When IPv4 address is configured to be static for peers, Radio IP will be used in this case.

3.14.5.7
Ethernet IP

This IP Address allows the user to specify the Ethernet IP Address for the repeater Ethernet Port.

NOTICE: This feature is disabled if DHCP is checked.

3.14.5.8
Gateway IP

This IP Address allows the user to configure the Gateway IP Address for the repeater Ethernet Port.

Gateway IP address is the IP address used for by the repeater over the IP network. This feature is disabled if DHCP is checked.

3.14.5.9
Gateway Netmask

This IP Address allows the user to configure the Gateway Netmask for the repeater Ethernet Port 2. Gateway Netmask is the Gateway IP Netmask used by the repeater over the IP Network.

NOTICE:

- This feature is disabled if DHCP is checked.

3.14.5.10
Primary DNS Server IP

This field allows the user to specify the IP address of the primary DNS Server for Wi-Fi

NOTICE:

- This feature is hidden when the DHCP check box is checked.
- This feature is hidden when the Wi-Fi feature is disabled.

3.14.5.11
Secondary DNS Server IP

This IP Address allows the user to specify the IP address of secondary DNS Server for the repeater Ethernet Port 1.

Secondary DNS Server IP is the IP address used for by the repeater over the IP network.

NOTICE:
The field is disabled if DHCP is checked.

3.14.6
IP Site Connect (Network)

The **IP Site Connect** section of the Network set contains the following fields:

3.14.6.1
Beacon Interval (sec)

This feature configures how often the repeater will send the beacon signal. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
600 sec	10 sec	10 sec

NOTICE:
The Beacon Duration (ms) feature is disabled for repeaters when this feature is set to 0.

This feature is disabled when Link Type is set to None.

For 1.5a+ and MOTOTRBO SLR Series repeaters, this feature is hidden when the IP Site Connect and the Satellite Receiver features are disabled.

This feature is the Network Node for subscriber and Link Establishment node for repeater.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.14.7
IP Repeater Programming (Network)

The **IP Repeater Programming** section of the Network set contains the following fields:

3.14.7.1
Enable (IP Repeater Programming)

Allows the user to enable or disable the IP Repeater Programming feature on a Repeater.

3.14.8
Bluetooth (Network)

The **Bluetooth** section of the Network set contains the following fields:

3.14.8.1
Enable (Bluetooth)

This check box allows the user to enable or disable the Bluetooth feature.

3.14.8.2
Country Code Channel

Configures different frequency hopping channel support for different country.

The choices are 79 Channels and 23 Channels. 23 Channels setting is only used in France and Spain.

3.14.8.3
Reconnect TOT (min)

Sets the duration that the radio waits while attempting to reconnect to the same device.

The reconnection to the same device is performed via Bluetooth Headset or a serial Bluetooth device after the device is disconnected perhaps due to out or range or power off from the radio. The Mobile may want to use a longer time out because it does not have any battery life concern.

Range:

Maximum	Minimum	Increment
30 (Portable), 30 and ∞ (Mobile) min	0 min	1 min

NOTICE:
This feature automatically sets the value to infinity (∞) or Disabled (for Portable) if the user input is greater than 30.

This feature automatically sets the value to Disabled if the user input is less than 1.

3.14.8.4
Off-Hook

Defines the Mobile audio routing when the Bluetooth microphone is off the hook.

Disconnect Bluetooth Audio
Regardless of whether the Bluetooth Headset is connected to the radio or not, and whether the Bluetooth or internal radio audio path is active or not if the Bluetooth Headset is connected to the radio, the radio utilizes the internal radio audio path.

None
When the Bluetooth Headset is not connected to the radio, the radio utilizes the internal radio audio path. When the Bluetooth Headset is connected to the radio, the radio utilizes the Bluetooth audio path if the Bluetooth audio path is active and utilizes the internal radio audio path if the internal radio audio path is active. This path can be switched via the programmable button press (Buttons - Bluetooth Headset Audio Switch).

3.14.8.5
Rear PTT Audio Routing

Defines the Mobile rear PTT audio routing for Bluetooth transmission.

It is possible to meet Hands-Free operation regulation, by configuring the rear PTT as Foot-Switch for Bluetooth Mic transmission. Also, the user may use the rear PTT for data transmission or preconfigured microphone audio (i.e. Visor Mic).

Headset Mic Audio Follows Rear PTT
If the rear PTT is pressed, then the transmission audio is taken from the Bluetooth Headset microphone.

Rear Mic Audio Follows Rear PTT
If the rear PTT is pressed, then the transmission audio is taken from the radio rear microphone.

3.14.8.6
Remote HSP Address

Configures a remote Bluetooth Headset (HSP) device hardware address for pairing in a Non-Display or Numeric Display model radios.

The range is "00:00:00:00:00:00:00" to "FF:FF:FF:FF:FF:FF". Example of an address is "00:21:3c:2d:1F:5c".

3.14.8.7
Remote SPP Address

Configures a remote Bluetooth data (SPP) device hardware address for pairing in a Non-Display or Numeric Display model radios.

The range is "00:00:00:00:00:00:00" to "FF:FF:FF:FF:FF:FF". Example of an address is "00:21:3c:2d:1F:5c".

3.14.8.8

POD PTT Device Address

This preprogrammed address is used to connect to the PTT pod device on a preprogrammed button.

The format and range for the address are (00-FF):(00-FF):(00-FF):(00-FF):(00-FF):(00-FF).

NOTICE:
This feature is applicable to Non Display models only.

3.14.8.9

HSP Fixed Pin

Configures a fixed pin for the Bluetooth Headset pairing authentication.

During the pairing process, if pin authentication is requested by the remote device, the radio which is also the Bluetooth Host will use this pin to authenticate. The user can enter a maximum of six numeric digits. For example, "000" and "00000". They are different pins.

Range:

Maximum	Minimum	Increment
999999	0	1

NOTICE:
For the 3- and 4- button radio models, pairing password pin must be configured with the Radio Management Client (RMC).

This feature value cannot be empty.

3.14.8.10

SPP Fixed Pin

Configures a fixed pin for the Bluetooth data device (i.e. Scanner) pairing authentication.

During the pairing process, if pin authentication is requested by the remote device, the radio which is also the Bluetooth Host will use this pin to authenticate. The user can enter a maximum of six numeric digits. For example, "000" and "00000". They are different pins.

Range:

Maximum	Minimum	Increment
999999	0	1

NOTICE:
For the 3- and 4- button radio models, pairing password pin must be configured with the Radio Management Client (RMC).

This feature value cannot be empty.

3.14.8.11

Permanent Discoverable

This check box allows the user to enable or disable Bluetooth Permanent Discoverable.

NOTICE:
This feature is supported only on portable with Bluetooth feature enabled.

This feature is hidden when the Bluetooth Permanent Discoverable feature is not purchased.

3.14.8.12
Device Database Erase on Power Up

Allows the user to enable and disable the Device Database Erase On Power Up.

NOTICE:
This feature is supported in Digital mode only.

This feature is greyed-out when Permanent Discoverable is enabled.

3.14.8.13
DNS-SD Interval

This drop list allows the user to enable and disable DNS-SD for the Bluetooth interface of the radio. Valid choices include “**Disabled**” and “**90 sec**”.

3.14.9
Bluetooth Serial Port Profile Data Routing (Network)

The **Bluetooth Serial Port Profile Data Routing** section of the Network set contains the following fields:

3.14.9.1
Destination (Bluetooth Serial Port)

Configures the destination for data routing in a Bluetooth connection.

Only one destination route is configured at any given time.

None
No Bluetooth data routing.

IP
Data is routed from the Bluetooth device to a server IP address (applicable to Digital mode only).

Option Board
Data is routed from the Bluetooth device to the option board.

Data Accessory
Data is routed from the Bluetooth device to the data accessory device.

NOTICE:
The feature is greyed-out when Permanent Discoverable is enabled.

3.14.9.2
Destination Network Type (Bluetooth)

Configures the network type used for data routing in a Bluetooth connection.

The available choices are CAI, PC Bluetooth or PC USB.

Channel Select 1
This is an input line that allows an external device to select a channel. When the pin is assigned to this option, the pin can be triggered individually or combined with other pins assigned to this option to select a channel. See Configuration of Pins for Channel Select.

Channel Select 2
Refer to Channel Select 1 functionality.

Channel Select 3
Refer to Channel Select 1 functionality.

Channel Select 4

Refer to Channel Select 1 functionality.

NOTICE:
This feature is greyed-out if Destination (Bluetooth) is set to a value other than IP.

The feature is greyed-out when Permanent Discoverable is enabled.

This feature is supported in Digital mode only.

3.14.9.3 Destination Radio ID (Bluetooth)

Configures the radio ID for sending generic Bluetooth Serial Port Profile (SPP) data (e.g. Bluetooth Scanner data) to the remote radio via the network as specified in Destination Network Type.

This ID and the Destination Network Type value are used to derive the Destination IP for the remote radio.

Range:

Maximum	Minimum	Increment
16776415	1	1

NOTICE:
This feature is greyed-out if Destination (Bluetooth) is set to a value other than IP.

The feature is greyed-out when Permanent Discoverable is enabled.

This feature is supported in Digital mode only.

3.14.9.4 Destination IP (Bluetooth)

This is the IP Address used for data routing in a Bluetooth connection.

The format and range for the address are(000-255).(000-255).(000-255).(000-255).

NOTICE:
This feature is non-editable.

The first octet of this feature is set to the same value of CAI Network when Destination Network Type is set to CAI.

The first octet of this feature is set to the value of of CAI Network when Destination Network Type is set to PC USB.

The first octet of this feature is set to the value of of CAI Network when Destination Network Type is set to PC Bluetooth.

The value in the last three octets correspond to the value in Destination Radio ID.

This feature is supported in Digital mode only.

3.14.9.5 Destination UDP Port (Bluetooth)

Configures the UDP Port used for routing the Serial Port Profile (SPP) data to the remote radio's IP application.

Range:

Maximum	Minimum	Increment
65535	0	1

NOTICE:
This feature is greyed-out if Destination (Bluetooth) is set to a value other than IP.

The feature is greyed-out when Permanent Discoverable is enabled.

This feature is supported in Digital mode only.

3.14.10
USB HID Data Routing (Network)

The **USB HID Data Routing** section of the Network set contains the following fields:

3.14.10.1
Destination (USB)

Configure the destination for data routing in a Universal Serial Bus (USB) connection.

Only one destination route is configured at any given time.

None
No USB data routing.

IP
Data is routed from the USB device to a server IP address (applicable to Digital mode only).

Option Board
Data is routed from the USB device to the option board.

3.14.10.2
Destination Network Type (USB)

Configure the network type used for data routing in a Universal Serial Bus (USB) connection.

The available choices are CAI, PC Bluetooth or PC USB.

NOTICE:
This feature is enabled if Destination (USB) is set to IP.

This feature is supported in Digital mode only.

3.14.10.3
USB Destination Radio ID (USB)

Configures the radio ID for sending generic Universal Serial Bus (USB) Human Input Device (HID) data (e.g. Scanner data) to the remote radio via the network as specified in Destination Network Type.

This ID and the Destination Network Type value are used to derive the Destination IP for the remote radio.

Range:

Maximum	Minimum	Increment
16776415	1	1

NOTICE:
This feature is enabled if Destination (USB) is set to IP.

This feature is supported in Digital mode only.

3.14.10.4
Destination IP (USB)

This is the IP Address used for data routing in a Universal Serial Bus (USB) connection.

The format and range for the address are (000-255).(000-255).(000-255).(000-255).

NOTICE:
This feature is enabled if the Destination (USB) feature is set to IP.

This feature is supported in Digital mode only.

3.14.10.5
Destination UDP Port (USB)

Configures the UDP Port used for data routing in a Universal Serial Bus (USB) connection.

Range:

Maximum	Minimum	Increment
65535	0	1

NOTICE:
This feature is enabled if the Destination (USB) feature is set to IP.

This feature is supported in Digital mode only.

3.14.11
Time Zone (Network)

The **Time Zone** section of the Network set contains the following fields:

3.14.11.1
Daylight Saving Time

This check box allows the user to set daylight savings time for the for the network.

3.14.11.2
Directional Offset

This field allows the user to selected a directional time zone offset.

The available options are as follows:

- **Add TZ Offset**
- **Subtract TZ Offset**

3.14.11.3
Hour Offset

This fields allows the user to set an hour offset to the time zone of the server.

The hour offset is applied to the time zone setting in Directional Offset on page 553.

The allowable range is 0 to 15, in one hour increments.

3.14.11.4
Fractional Hours

This fields allows the user to set a fractional hour offset that is applied to time zone of the server.

The fractional hour offset is applied to the time zone setting in Directional Offset on page 553.

The available selections are as follows:

- 00
- 15
- 30
- 45

3.14.12
NTP Settings (Network)

The **NTP Settings** section of the Network set contains the following fields:

3.14.12.1
DHCP

This check box allows the user to select whether the IP address for this repeater's Ethernet Port is static or dynamic assigned IPv4 address.

When IPv4 address is configured to be static for peers, Radio IP will be used in this case.

3.14.12.2
DNS

This check box allows the user to configure DNS Server for the repeater Ethernet Port 1.

The repeater Ethernet Port 1 is used by the repeater over the IP network.

3.14.12.3
NTP Server IP

This IP address allows the user to configure the NTP Server statical IP address for the repeater Ethernet Port 1.

The repeater Ehternet Port 1 is used by the repeater over the IP network.

NOTICE:
The field is enabled if NTP is checked.

3.14.12.4
NTP DNS Address

This field displays the DNS Server name for the repeater.

The choices are **None** or browse for a DNS Server from the list of available DNS Servers.

3.14.12.5
RTC Refresh Interval (hr)

This field allows the user to set the Real Time Clock refresh rate in hours.

Range:

Maximum	Minimum	Increment
25	1	1

3.14.13
DNS Address (Network)

The **DNS Address** section of the Network set contains the following fields:

3.14.13.1
Hostname

This edit box allows the user to configure the DNS hostname. The valid inputting characters includes a through z, A through Z, digits 0 to 9, and the hyphen.

NOTICE:

- If the user enters an invalid DNS Hostname, the value will change to the last valid DNS Hostname.
- This column is not editable.
- This feature is applicable to Next Generation Repeater only.

3.14.14
WAVE 5000 (Network)

The **WAVE 5000** ™ section of the Network set contains the following fields:

3.14.14.1
WAVE Server Type

This read-only field displays the WAVE™ Server type as **Enterprise WAVE Server** for all connected radios.

3.14.14.2
Server Name

This field allows the user to enter the WAVE™ server name.

This is a radio-wide feature.

3.14.14.3
Share Location

This field allows the user to share the location of the radio. This is a radio-wide feature.

When enabled and if GNSS is fixed, the radio sends the location to the WAVE™ server every 7.5 seconds. This allows smart phones with the WAVE application to view the radio's position.

NOTICE: Users can only share the location when in Wi-Fi mode.

3.14.14.4
Jitter Voice Buffer (sec)

A jitter buffer is a temporary storage buffer used to capture incoming data packets. It is used in packet-based networks to ensure the continuity of audio streams by smoothing out packet arrival times during periods of network congestion.

Range:

Maximum	Minimum	Increment
2000 ms	200 ms	20 ms

3.14.14.5
WAVE 5000 Username

This field allows the user to enter the WAVE 5000™ user ID. This is a radio-wide feature.

3.14.14.6
WAVE 5000 Password

This field allows the user to enter the WAVE 5000™ password. This is a radio-wide feature.

3.14.14.7
WAVE Activation Code

3.14.14.8
WAVE OnCloud

3.14.15
WAVE OnCloud (Network)

WAVE OnCloud is a broadband Push-to-Talk (PTT) solution.

WAVE OnCloud provides rapid and seamless group or one-to-one communication over LTE/4G, 3G, and WiFi networks for MOTOTRBO ™ radios.

3.14.15.1
WAVE OnCloud URL

WAVE OnCloud URL allows the user to enter the URL for the WAVE OnCloud.

The default WAVE OnCloud URL is http://wgp.poc01.waveoncloud.com:443/cas/activation.

3.14.15.2
Share Location

This field allows you to share the location of the radio. Share Location is a radio-wide feature.

When GNSS is fixed and Share Location is enabled, the radio broadcasts its location to the WAVE OnCloud server every 7.5 seconds. This allows smartphones with the WAVE OnCloud application to view the position of the radio.

NOTICE: Users can only share the location when Wi-Fi mode is enabled.

3.14.15.3
VOX State

This feature enables the VOX (Voice Operated Transmit) feature on a selected channel.

VOX provides a convenient means of hands-free voice activated communication, removing the need to press the Push-to-Talk (PTT) button. This feature enables the radio to automatically assume the Push-to-Talk (PTT) button is pressed whenever its microphone on the VOX-capable accessory detects

voice. To avoid truncation at the beginning of the VOX call, Talk Permit tone (TPT) should be disabled. If TPT is enabled, the radio user shall use a trigger word to key-up the radio. This trigger word will not, in most cases, be transmitted. After uttering the trigger word, the radio user should begin speaking only after the TPT is heard. Channels may have their VOX feature toggled on/off via a short or long programmable button press (VOX On/Off) or VOX (Utilities Menu). This is a radio-wide feature.

NOTICE:

This feature is disabled if RX Only, Option Board Trunking or Allow Interruption is enabled.

Disable the Talk Permit tone.

VOX operates with a “Channel Free” admit criteria regardless of the selected channel Admit Criteria.

3.15 WiFi Network Set

The **WiFi Network** set is used to configure the wireless capabilities of the supported subscriber radio.

The following sections contain all the supported fields:

3.15.1 General (WiFi Network)

The **General** section of the WiFi Network set contains the following fields:

3.15.1.1 Enable

This check box allows the user to enable or disable Wi-Fi connection on the radio.

NOTICE:

- User must enable this feature to use the share the location of the radio through WAVE feature.
- This feature is hidden when the Wi-Fi feature is disabled.

3.15.1.2 802.11D

This check box allows the user to enable or disable 802.11D support. 802.11D is a standard that automatically sets the available Wi-Fi channels based on information provided by the Wi-Fi access point.

NOTICE:

- This feature is hidden when the Wi-Fi feature is disabled.

3.15.1.3 Regulatory Region

This field allows the user to choose the regulatory region for the radio. The regulatory region indicates the area where this radio is uses and allows the radio to restrict the Wi-Fi channels only to those which are permitted by the appropriate regulations. Valid choices include “FCC”, “IC”, “ETSI”, “Japan”, and “China”.

NOTICE:

- This feature is hidden when the Wi-Fi feature is disabled.

3.15.1.4
DHCP

This check box allows the user to select between static or dynamic Wi-Fi IP address.

NOTICE:

- This feature is hidden when the Wi-Fi feature is disabled.

3.15.1.5
IP Address

This field allows the user to specify the Wi-Fi IP Address.

NOTICE:

- This feature is hidden when the DHCP check box is checked.
- This feature is hidden when the Wi-Fi feature is disabled.

3.15.1.6
Gateway IP

This field allows the user to configure the Gateway IP Address for Wi-Fi.

NOTICE:

- This feature is hidden when the DHCP check box is checked.
- This feature is hidden when the Wi-Fi feature is disabled.

3.15.1.7
Gateway Netmask

This feature assigns a Gateway Netmask Address for a repeater using Wi-Fi.

This is a radio-wide feature.

3.15.1.8
Primary DNS Server IP

This field allows the user to specify the IP address of the primary DNS Server used for Wi-Fi.

NOTICE:

- This feature is hidden when the DHCP check box is checked.
- This feature is hidden when the Wi-Fi feature is disabled.

3.15.1.9
Secondary DNS Server IP

This field allows the user to specify the IP address of the secondary DNS Server for Wi-Fi.

NOTICE:

- This feature is hidden when the DHCP check box is checked.
- This feature is hidden when the Wi-Fi feature is disabled.

3.15.1.10

DNS-SD Interval

This feature list allows the user to enable and disable DNS-SD for the Wi-Fi interface of the radio. Valid choices include “**Disabled**” and “**90 sec**”.

NOTICE:

- This feature is hidden when the Wi-Fi feature is disabled.

3.15.1.11

Device Discovery Server Name

This feature is to establish a connection between the MOTOTRBO radio and the Device Programmer.

If the MOTOTRBO radio and the Device Programmer are on the same network setting, then the user can use the same broadcast setting. If the MOTOTRBO radio and the Device Programmer are not on the same network setting, then the user must configure the fully qualified domain name (FQDN) or IP address of the Device Programmer in the MOTOTRBO radio.

NOTICE: Ensure the firewall on the Device Programmer host is properly configured. Refer to *Windows Ports used by Radio Management* in System Planner.

3.15.1.12

Network SSID

This field allows the user to specify the SSID to be used for the Wi-Fi access point.

NOTICE:

- This feature is hidden when the Wi-Fi feature is disabled.
- If the user enters a value that is more than 32 bytes when encoded in UTF —8 format, the value will reset to the previous value.
- Duplicated SSID is not allowed. When a duplicated SSID is entered, the value is automatically updated to the previous value and a message displays.
- If the user enters a blank value and leaves this field, the value changes to the previous value.

3.15.1.13

Security Type

This field allows the user to set the encryption protocol for the configured Network SSID.

The following selections are supported:

- Open
- WEP
- WPA/WPA2 Enterprise
- WPA-Personal/WPA2-Personal

NOTICE:

- Opportunistic Key Caching (OKC) is only applicable for WPA Enterprise security type only.
- The field is hidden when the Wi-Fi feature is disabled.
- If the user sets the value to a selection other than **Open**, the user must reset the Encrypted Network Password on page 560 value according to the new security type.

3.15.1.14
Encrypted Network Password

This field allows the user to specify the password to use for the Wi-Fi access point.

NOTICE:

- This feature is hidden when the Wi-Fi feature is disabled.
- The characters entered in this field are not visible.
- If Security Type is set to “None”, this field will be greyed out.
- If Security Type is set “WEP”, the value in this field must be one of the following : 10 hexadecimal digits, 26 hexadecimal digits, 5 printable ASCII characters, or 13 printable ASCII characters.
- If the user enters an invalid value which is not specified in note 3 and 4, the value will reset to the default value. If this field is left blank, the value will not reset.

3.15.1.15
EAP Methods

This field allows the user to select the Extensible Authentication Protocol (EAP) method that is used as the authentication framework for wireless networks and Point-to-Point connections.

The following selections are supported:

- **None**
- **PEAP** (Protected Extensible Authentication Protocol)
- **TLS** (Transport Layer Security)
- **TTLS** (Tunneled Transport Layer Security)

NOTICE: This field is accessible when Security Type on page 559 is set to **WPA/WPA2 Enterprise**.

3.15.1.16
Phase 2 Authentication

This field allows the user to set the Phase 2 Authentication for the selected EAP Method after the security tunnel is created at phase one.

The following selections are supported:

- **None**
- **CHAP** (Challenge-Handshake Authentication Protocol)
- **MSCHAP** (Microsoft Challenge-Handshake Authentication Protocol)
- **MSCHAPV2** (Version 2 of MSCHAP)
- **PAP** (Password Authentication Protocol)
- **TLS** (Transport Layer Security)

NOTICE:
When the Phase 2 Authentication is **TLS**, the device certificate is required.

3.15.1.17
Identity

This field allows the user to enter the identity for the subscriber.

The identity is set as the MAC address of the Wi-Fi network adapter by default.

3.15.1.18
Identity Password

This field contains the preshared identity password for the subscriber using EAP authentication.

3.15.1.19
Anonymous Id

This optional field allows the user to use an anonymous identity to hide the true identity being sent to the authentication server.

3.15.1.20
Certificate

This field allows the user to select the Wi-Fi Enterprise Certificate for either a common certificate or a device certificate.

Wi-Fi Enterprise Certificates are configured from the Common Certificate List Items or the Device Certificate List Items.

3.15.1.21
Validate Server Certificate

This checkbox allows the user to enable the server validation flag.

3.15.1.22
Roaming Aggressiveness

This feature allows the user to adjust the level of roaming aggressiveness. Boosting the roaming aggressiveness increases the rate of the network card seeking out an access point with a stronger signal.

Level range from Lowest (1), Medium-Low (2), Medium (3), Medium-High (4) to Highest (5). The level range determines how often the radio scans for new access points to roam to.

Table 48: Selections

Selections	Description
1	Radio scans for new access points to roam at every 60 seconds.
2	Radio scans for new access points to roam at every 30 seconds.
3	Radio scans for new access points to roam at every 10 seconds.
4	Radio scans for new access points to roam at every 5 seconds.
5	Radio scans for new access points to roam at every 3 seconds.

3.15.1.23
Boost Tx Power

Boost Tx Power allows the user to increase transmit power and reliability. Enable this feature to allow 802.11b 11 Mbps as the transmit rate when the Wi-Fi signal is weak.

3.15.1.24
MSI Wi-Fi Certificate

This feature is to apply MSI Wi-Fi Certificate to authenticate the subscriber and applicable only when Security Type on page 559 is WPA/WPA2 Enterprise.

3.15.2
Wifi Enterprise Certificates (WiFi Network)

The **Wifi Enterprise Certificates** section of the WiFi Network set allows for the configuration of Common Certificates and Device Certificates.

NOTICE:
Common certificates are manually re-enrolled by right-clicking a common certificate in the list item table and selecting **Regenerate certificate**. Device certifications are re-enrolled in Radio View. Select the radio with the relevant device certificate, right-click the Certificate column, and select **Regenerate certificate**.

Common and device certificates are automatically re-enrolled when any of the following fields are modified:

- Challenge Password
- Country Name
- State
- Locality
- Organization
- Organization Unit
- Common Name
- Email

The following fields are supported:

3.15.2.1
Friendly Name (Common Certificate)

This field allows the user to enter a friendly name to indicate a chain of the CA certificates for the common certificate.

3.15.2.2
CA Identifier (Common Certificate)

This field allows the user to enter a string to be used as the certification authority issuer identifier.

This CA Identifier is skipped by most of the Simple Certificate Enrollment Protocol (SCEP) servers.

3.15.2.3
URL of SCEP (Common Certificate)

This field allows the user to enter the URL for the Simple Certificate Enrollment Protocol (SCEP) server for the common certificates.

3.15.2.4
Renewal Percentage (Common Certificate)

This field allows the user to set the percentage for when the certificate is triggered for renewal.

Table 49: Range

Maximum	Minimum	Increment
100	0	1

3.15.2.5
Finger Print (Common Certificate)

This field allows the user to enter the MD5 finger print of the root certificate authority.

3.15.2.6
GUID (Common Certificate)

This read-only field displays the system generate globally unique identifier for the common certificate.

3.15.2.7
Friendly Name (Device Certificate)

This field allows the user to enter a friendly name to indicate a chain of the client and CA certificates for the device certificate.

3.15.2.8
CA Identifier (Device Certificate)

This field allows the user to enter a string to be used as the certification authority issuer identifier.

This CA Identifier is skipped by most of the Simple Certificate Enrollment Protocol (SCEP) servers.

3.15.2.9
URL of SCEP (Device Certificate)

This field allows the user to enter the URL for the Simple Certificate Enrollment Protocol (SCEP) server for the device certificates.

3.15.2.10
Challenge Password (Device Certificate)

The Challenge Password is provided by the SCEP server and provided to the Certificate Signing Request (CSR) by the subscriber.

This is done so that the SCEP server can authenticate the subscriber as a valid client.

3.15.2.11
Country Name (Device Certificate)

This field allows the user to enter the country code required by the Certificate Signing Request (CSR).

NOTICE: Country Name is one of the standard attribute types in issuer and subject field of a certificate compliance with ISO 3166-1 Alpha 2 (for example, US).

3.15.2.12
State (Device Certificate)

This field allows the user to enter the state required by the Certificate Signing Request (CSR).

3.15.2.13
Locality (Device Certificate)

This field allows the user to enter the locality required by the Certificate Signing Request (CSR).

3.15.2.14
Organization (Device Certificate)

This field allows the user to enter the organization required by the Certificate Signing Request (CSR).

3.15.2.15
Organization Unit (Device Certificate)

This field allows the user to enter the organization unit required by the Certificate Signing Request (CSR).

3.15.2.16
Common Name (Device Certificate)

This field allows the user to enter the common name required by the Certificate Signing Request (CSR).

3.15.2.17
Email (Device Certificate)

This field allows the user to enter the email address required by the Certificate Signing Request (CSR).

The email address is reused to support the Subject Alternative Name (SAN), email, Domain Name System (DNS), and User Principal Name (UPN). The user can enter one SAN only.

The following examples show the SAN formats:

Example:
SAN with Email

```
subjectAltName=email:johnsmith@motorolasolutions.com
```

Example:
SAN with DNS

```
subjectAltName=DNS:su.motorolasolutions.com
```

Example:
SAN with User Principal Name

```
subjectAltName=UPN:johnsmith@motorolasolutions.com
```

3.15.2.18

Signature Hash Algorithm (Device Certificate)

This field allows the user to select the algorithm for producing a hash value for signature required by the Certificate Signing Request (CSR).

The supported selections are as follows:

- **MD5**
- **SHA-1**
- **SHA-256**
- **SHA-384**
- **SHA-512**

3.15.2.19

RSA Key Size (Device Certificate)

This field allows the user to select the encryption key size using RSA.

The following selections are supported:

- **1024**
- **2048**
- **4096**

3.15.2.20

Renew Strategy (Device Certificate)

The field is used to define whether the public key pair is updated.

The following selection are supported:

Rekey
Keep the public key pair and extend its validity range

Renew
Update the public key pair and extend its validity range

3.15.2.21

Renewal Period (Device Certificate)

This field allows the user to set the date and time for when the certificate is triggered for auto renewal.

The auto renewal is triggered when the current date and time is greater than or equal to the **Valid To** of the certificate minus Renewal Period.

3.15.2.22

Finger Print (Device Certificate)

This field allows the user to enter the MD5 finger print of the root certificate authority.

3.15.2.23

GUID (Device Certificate)

This read-only field displays the system generate globally unique identifier for the device certificate.

3.15.3
NTP Server (WiFi Network)

The **NTP Server** section of the WiFi Network set contains the following field:

3.15.3.1
NTP Server

This field allows the user to enter the domain name or IP address of the Network Time Protocol (NTP) server.

3.16
Sensor Set

Sensor Service is a connected solution for gaseous hazard monitoring and worker communication. The feature allows the radio users to automatically reports live operational and safety data to the supervisors and control rooms for monitoring and operational intelligence.

The **Sensor** set is used to allow the users to use Radio Management (RM) to import Transducer Electronics Data Sheet (TEDS) files through USB.

The following sections contain all the supported fields:

3.16.1
Sensor Feature Enable

This field allows to enable or disable Bluetooth Sensor feature. This feature requires bluetooth to be enabled.

3.16.2
Sensor Initialization Delay

This field allows to configure the sensor's initialization delay.

Range:

Minimum	Maximum	Increment
15 seconds	60 seconds	5 seconds

3.17
Link Establishment Set

The **Link Establishment** set is used to configure multiple repeaters in different geographical locations through a network (IP Site Connect, Capacity Plus–Single-Site, etc.) so that voice/data calls can be made across multiple sites. Each site has multiple Repeaters known as Peers which are controlled by a single Master.

The following sections contain all the supported fields:

3.17.1
Network Setting (Link Establishment)

The **Network Setting** section of the Link Establishment set contains the following fields:

3.17.1.1

Link Type

This feature configures the repeater type.

This available choices are Single Site, IP Site Master, and IP Site Peer in MOTOTRBO 1.7+ releases. The Authentication Key, DHCP, Ethernet IP, Peer Firewall Open Timer (sec), Gateway IP, Gateway Netmask, UDP Port, IP Site Connect, IP Site Connect, Messaging Delay, Beacon Duration (ms) and Beacon Interval (sec) features are disabled if this feature is set to None. The Master Archive File and Master UDP Port features are disabled if this feature is set to None or Master. This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

None
The repeater performs in Local Mode and does not support any of the Link Establishment system functionality.

Master
The master functions as the central point for a Repeater/RDAC-IP PC to find other Repeaters/ RDAC-IP PCs in the same Link Establishment system.

Peer
The peer is a repeater, or a PC running the RDAC application, that is connected to and able to perform as part of a Link Establishment system.

NOTICE:
The feature is only applicable for MOTOTRBO 1.4+ releases.

This feature is hidden when the IP Site Connect and the Capacity Plus–Single-Site features are disabled or when the IP Site Connect and the Capacity Plus–Multi-Site features are disabled. (Not applicable for 32 MB repeater starting in MOTOTRBO 1.7+ releases).

This feature is available under Link Establishment in MOTOTRBO 1.7+ releases.

This available choices are None, Master, and Peer in MOTOTRBO releases prior to 1.7+.

When the IP Site Connect and Capacity Plus–Single-Site features are disabled, only None and Master options are available.

Notwithstanding Note 4 and Note 5, when Voting Mode is set to Digital Satellite Receiver, this feature is greyed-out and set to Peer.

3.17.1.2

Authentication Key

This field allows the user to specify the private key value in a repeater using Link Establishment.

All repeaters within the same Link Establishment system must share the same Authentication Key. The user may enter up to a maximum of 40 characters. Valid characters are 0-9 and A-F. Setting this value to blank indicates that the Authentication is disabled. Setting this key value as forty "F", or Ø indicates that the current value on the targeted repeater is to be preserved during write/clone operations. For security reasons, if the codeplug is read from a radio or opened from archive, its Authentication Key value is shown as blank. This is a radio-wide feature.

NOTICE:
This feature is disabled when Link Type is set to None.

This feature is disabled when Link Type is set Peer and Master Archive File is specified.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.17.1.3
DNS

This check box enables the DNS feature within the Link Establishment system.

3.17.1.4
Master IP

This feature specifies the IP Address of the Master within the Link Establishment system.

The format and range for the address are (000-255).(000-255).(000-255).(000-255). This is a radio-wide feature.

NOTICE:
This feature is enabled when Link Type is set to Peer.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.17.1.5
DNS

This field allows the user to browse and select a master DNS address from a list of Network Sets within the Link Establishment system.

The available options are **None** and any **Network** Set.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.17.1.6
Master UDP Port

This feature specifies the User Datagram Protocol (UDP) port number of the Master within the Link Establishment system.

UDP is a protocol used for peer-to-peer services within the Link Establishment system. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
65535	1024	1

NOTICE:
This feature is enabled when Link Type is set Peer and Master Archive File is left blank.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.17.1.7
UDP Port

This feature specifies the User Datagram Protocol (UDP) port number of the Peer within the Link Establishment system.

UDP is a protocol used for peer-to-peer services within the Link Establishment system. The Master's UDP is set as the Peer's Master UDP Port in the Link Establishment system. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
65535	1024	1

NOTICE:
This feature is disabled when Link Type is set to None.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.17.1.8
Peer Firewall Open Timer (sec)

This feature displays and allows the user to select a firewall open message timer for Peer to Peer Protocol (P2P) messages.

This timer is used to keep the connection alive between the application and its peer by having a periodic message sent between them at an interval as defined here. This timer is only applicable to Peers. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
60 sec	5 sec	1 sec

NOTICE:
This feature is disabled when Link Type is set to None.

This feature is disabled when Master Archive File is specified.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.17.2
IP Site Connect (Link Establishment)

The **IP Site Connect** section of the Link Establishment set contains the following fields:

3.17.2.1
Beacon Duration (ms)

This feature configures the length of the beacon signal. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
18000 ms	480 ms	120 ms

NOTICE:
This feature is disabled when Link Type on page 567 is set to **None** or when the **Beacon Duration** field is set to **360**.

For 1.5a+ and MOTOTRBO SLR Series repeaters, this feature is hidden when the IP Site Connect and the Satellite Receiver features are disabled.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters only in Digital mode only.

3.17.2.2
Beacon Interval (sec)

This feature configures how often the repeater will send the beacon signal. This is a radio-wide feature.

NOTICE:
The Beacon Duration (ms) feature is disabled for repeaters when this feature is set to 360.

This feature is disabled when Link Type is set to None.

For 1.5a+ and MOTOTRBO SLR Series repeaters, this feature is hidden when the IP Site Connect and the Satellite Receiver features are disabled.

This feature is the Network Node for subscriber and Link Establishment node for repeater.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR 5000 repeaters in Digital mode only.

Range:

Maximum	Minimum	Increment
600 sec	10 sec	10 sec

3.17.3
Capacity Plus (Link Establishment)

The **Capacity Plus** section of the Link Establishment set contains the following fields:

3.17.3.1
Site ID (Repeater)

Enters the ID of the site that the Repeater is on.

Range:

Maximum	Minimum	Increment
20	1	1

NOTICE:
All the Repeaters on the same site must have the same ID.

The Site ID of the subscriber radio connecting to the Repeater of this site must have the same ID as this feature.

This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

When the user enables the Capacity Plus–Multi-Site Extend feature, a maximum of 20 sites are available.

This feature is disabled when Link Type is set to None.

This feature is supported in Digital mode only.

3.17.3.2

Site Alias (Repeater)

Configures a name for the site that the Repeater is on.

NOTICE:
This feature is displayed when the Capacity Plus–Multi-Site or Satellite Receiver features are enabled.

This feature is disabled when Link Type is set to None.

This feature is supported in Digital mode only.

3.17.3.3

Beacon Duration (ms)

This feature configures the length of the Beacon Duration for Capacity Plus.

The minimum recommended Beacon Duration for 2, 4, 6, or 8 channels is 180 ms. The minimum recommended Beacon Duration for 10 or 12 channels is 240 ms. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
600 ms	180 ms	60 ms

NOTICE:
This feature is displayed when the Capacity Plus–Single-Site, Capacity Plus–Multi-Site, or Satellite Receiver feature is enabled.

This feature is disabled when Link Type is set to None. This dependency is only applicable for MOTOTRBO SLR Series repeaters.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.17.3.4

Beacon Interval (ms)

This feature specifies how often the radio sends out the beacon signal for Capacity Plus.

In a Capacity Plus–Single-Site system, this feature value should be higher in the subscriber than the repeater. In a Capacity Plus–Multi-Site system, this feature value should be the same in both the subscriber and repeater. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
4800 ms	960 ms	480 ms

NOTICE:
This feature is displayed when the Capacity Plus–Single-Site, Capacity Plus–Multi-Site, or Satellite Receiver feature is enabled.

This feature is disabled when Link Type is set to None. This dependency is only applicable for MOTOTRBO SLR Series repeaters.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.17.3.5

Rest Channel/Site IP

The Rest Channel IP Address is a virtual IP address that is required for correct intra-site and inter-site operation of a Capacity Plus–Single-Site or Capacity Plus–Multi-Site system.

As the Rest Channel rotates through the channel pool of a site, this virtual IP address is associated with a different physical repeater only for the duration for which one of its slots is the Rest Channel. This IP address MUST be the same for all repeaters residing at the same site.The format and range for the address are (000-255).(000-255).(000-255).(000-255). This is a radio-wide feature.

NOTICE:
This feature is disabled when Link Type is set to None.

This feature is displayed when the Capacity Plus–Single-Site, Capacity Plus–Multi-Site, or Satellite Receiver feature is enabled.

This IP cannot be the same as the Ethernet IP if DHCP is disabled.

This feature is applicable in Digital mode only.

3.17.3.6

Rest Channel/Site UDP Port

In a Capacity Plus–Single-Site system, this feature allows the user to configure the UDP port of the Repeater rest channel for communication with third party applications connected within a Capacity Plus–Single-Site system.

In a Capacity Plus–Multi-Site system, this feature allows the user to configure the UDP port of site for communication with other sites connected within a Capacity Plus–Multi-Site system.This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
65535	1024	1

NOTICE:
This feature is disabled when Link Type is set to None.

This feature is displayed when the Capacity Plus–Single-Site, Capacity Plus–Multi-Site, or Satellite Receiver feature is enabled.

This port cannot be the same as the UDP Port.

This feature is applicable in Digital mode only.

3.17.3.7

Rest Channel Time-Out-Timer (Min)

The Rest Channel Time-out-Timer controls how long a repeater keeps its rest channel role in the absence of a new call activity before moving the role to another repeater in multi channel Capacity Plus–Single-Site and Capacity Plus–Multi-Site System.

The Rest Channel Time-out-Timer starts as soon as a repeater assumes the rest channel role. In most call scenarios, the rest channel will move to another channel before the Rest Channel TOT expires. However, during a low call volume scenario (e.g. during off hours and holidays) the Rest Channel TOT will time out more often and it will normally keep rotating the rest channel from one channel to another. The Rest Channel TOT will be most effective during idle or low call volume condition. For a site where the repeaters have different channel preference level, it is suggested to use larger Rest Channel TOT value (10 minutes), so that high-preference channels are more frequently utilized even during low call volume conditions. Note that the Rest Channel TOT mechanism steers the rest channel through all

preference level repeaters in round-robin manner, whereas the incoming calls mechanism selects higher preference channels more often than lower preference channels. Shorter Rest Channel TOT (2 minutes) will lead to faster Rest Channel rotation and better resilience to failure and interference, however may have minor impact to battery life, because radios will receive new rest channel assignment information more often.

The Rest channel rotation may cause minor delay in call access time during force rest channel switching period. The Faster the rotation, the more frequent will be such access time delays. Note the impact of such delays should be unnoticeable to radio users. If necessary, the Adaptive Rest Channel Rotation functionality can also be disabled completely by disabling Rest Channel TOT value. This drop-down list allows the user to configure the Time Out Timer of the rest channel for the trunked Capacity Plus repeater. Whenever the rest channel is not in use, the repeater switches to a different rest channel after the time is specified by this field. The purpose of this function is to increase the system's resilience to RF interference. The valid choices available are Disabled, 2, 4, 6, 8, and 10.

Range:

Maximum	Minimum	Increment
65535	1024	1

NOTICE:
This feature is disabled when Link Type is set to None.

This feature is displayed when the Capacity Plus–Single-Site or Capacity Plus–Multi-Site feature is enabled.

This feature is applicable in Digital mode only.

This feature is not applicable for Satellite Receivers.

3.18 MOTOTRBO Link Set

The **MOTOTRBO Link** set is used to configure the dedicated link backhaul feature for SLR repeaters and subscribers that support IP Site Connect channels.

A MOTOTRBO Link configuration uses the Land Mobile Radio (LMR) channel to carry typical voice and data call features out to a remote site where no wireline connectivity exists. This feature is performed by using LMR channels to daisy chain repeaters together into a linear RF network topology. Each node of the network is referred to as a site. The sites are linked or chained together using LMR channels that are dedicated for the sole purpose of linking the sites together. Each site must contain at

least two repeaters. The origin/terminating site must have one link repeater and one standard repeater. The Interim site must have two link repeaters and an optional one standard repeater.

NOTICE:
MOTOTRBO Link is disabled by default and only editable when the IP Site Connect on page 775 option is enabled.

When MOTOTRBO Link is enabled, the Admit Criteria on page 806 feature is impacted as follows:

- The **Always** option is not available.
- **In Call Criteria** is defaulted to **Follow Admit Criteria** and disabled. Therefore, **Follow Admit Criteria** and **TX Interrupt** are not allowed.

The MOTOTRBO Link feature does not support and disables fields related to the Transmit Interrupt feature such as Allow Interruption on page 810 and TX Interruptible Frequencies on page 810.

Messaging Delay (ms) on page 776, GNSS/Data Revert Channel on page 815, Enhanced Channel Access on page 811, Enhanced GNSS (Conventional Personality) on page 789, and Dual Capacity Direct Mode (DCDM) on page 765 are disabled.

Backhaul Channel Access and Enhanced Channel Access are mutually exclusive configurable options.

The following fields are supported:

3.18.1 Link Mode

This field indicates whether the repeater is configured as a Dedicated Link in a MOTOTRBO Link system.

The following selections are supported:

- **None**
- **Dedicated Link**

Dedicated Link Backhaul
A backhaul type where a set of repeaters perform the link functionalities by only communicating with other repeaters along a backhaul chain and never with subscribers. Since these repeaters never communicate with subscribers, they have their own dedicated frequency pairs that can optionally be a unique frequency band that is different from the subscribers.

3.18.2 Site Type

This field indicates the site type in a backhaul configuration.

The following selections are supported:

- **Origin Site**
- **Interim Site**
- **Terminating Site**

Origin Site
The first site in the backhaul chain of repeaters. Only one origin site is supported. Beacons flow towards the origin site so that they can be aggregated by the proxy repeater, at the origin site. In dedicated link configurations, the origin site must contain at least one link repeater and one standard repeater.

Interim Site

Interim sites are the sites located between the origin site and the terminating sites in a backhaul chain of repeaters. Many interim sites are supported. In dedicated link configurations, the interim sites must contain at least two link repeaters and an optional standard repeater.

Terminating Site

A terminating site is the site at the end of a backhaul chain. The backhaul chain supports only one terminating site. Forks are not supported. The main fork that starts at the origin site of the backhaul chain is considered the first fork. A terminating site must have a standard repeater.

3.18.3
Repeater Type

This field indicates the type of backhaul repeater as either drop or link.

The following selections are supported:

- **Standard repeater**
- **Link Repeater**

Standard repeater

A repeater that is connected to other repeaters at the same site through a LAN. The other repeaters at the site are Link Repeaters. standard repeaters transmit calls that are heard by subscribers.

Link Repeater

A repeater that only communicates with other repeaters through the LMR channel. They are also connected to other Drop and Link Repeaters at the same site through a LAN.

3.18.4
GPIO Slot Timing Master

This check box is used to enable the repeater as a slot sync master or a slot sync slave in a MOTOTRBO Link system.

When enabled (checked), this repeater is configured as the slot sync master and relays master timing signals to slot sync slave repeaters. The slot sync master repeater and slave repeaters are physically connected through a GPIO pin on the DB25 accessory connector, configured as a **Site Slot Sync Output**.

When disabled (default), this repeater is configured as a slot sync slave and receives master timing signals from the slot sync master repeater. The slot sync slave repeaters and the master repeater are physically connected through a GPIO pin on the DB25 accessory connector, configured as a **Site Slot Sync Input**.

NOTICE: This feature is only applicable if Repeater Type on page 575 is set to **Link Repeater**. GPIO pins are configured in the Accessories Set on page 265 under the GPIO Physical Pins (Accessories) on page 278 section.

3.18.5
Maximum Number of Links

This field represents the maximum number of links (hops) between the origin site and the terminating site in the backhaul chain.

Range:

Maximum	Minimum	Increment
8	1	1

3.18.6
Link Beacon Interval (sec)

This field sets the interval between Beacon Transmissions on the Link Repeaters.

The link beacon interval on the standard repeater must have the same value as the link beacon interval configured on the link repeater.

Range:

Maximum	Minimum	Increment
300	60	60

3.18.7
IP Site Connect MOTOTRBO Link Site

The check box is used to enable IP Site Connect (IPSC) mode on the repeater.

It allows the repeater to be used as a Normal IPSC repeater connected to the backhaul system over IP.

NOTICE:
This feature is accessible when Link Mode on page 574 is set to **None**.

Or, when **Link Mode** is set to **Dedicated Link** and Site Type on page 574 is set to **Origin Site** and Repeater Type on page 575 is set to **standard repeater**.

3.19
Phone System Set

The **Phone System** set allows the user to initiate a Phone call to and receive a Phone Call from a PSTN phone user on all system configurations (i.e. Conventional Single Site, IP Site Connect, and Capacity Plus–Single-Site). The Phone user can select a wide area channel as the target channel of a Phone Call. The Phone system is based on the Digital Phone Patch system. The Digital Phone Patch system is activated when phone users try to dial to target radio where the target can be radios in specific talk group (talkgroup call), the specific radio (private call) or all call if the Enable All Call is enabled. The system can also be setup when radio users try to dial the specific phone. In Digital Phone Patch system, phone user can trigger talkgroup or private call to radio user while radio user is allowed to trigger private call to phone user. A maximum of 16 phone systems can be created.

The following sections contain all the supported fields:

3.19.1
General (Phone System)

The **General** section of the Phone System set contains the following fields:

3.19.1.1
Deaccess Code

This field allows the user to configure the phone system deaccess code on the subscriber radio.

For MOTOTRBO Conventional radios, the deaccess code is sent to the phone patch when attempting to disconnect the phone call. The user can enter up to ten characters. Valid characters are DTMF digits

0-9, *, #, and the pause character "P". For 3600 Trunking capable radios, the deaccess code allows the user to enter DTMF digits 0-9 and the pause character "P".

NOTICE:
This feature have a maximum of 10 characters.

This feature is hidden when the Digital Phone Patch feature is disabled.

For 3600 Trunking capable radios, for non-display models, this feature must not be empty. If the field is set to empty, on tabbing or moving out of this field, the value shall be set to 0 value.

For MOTOTRBO Conventional radios, this feature is supported in Digital mode only.

This feature is applicable to MOTOTRBO Conventional radios and 3600 Trunking capable radios.

For radios that operate under Capacity Max Open Radio mode, if the code is not required, the value must be empty (for display model) or set to a single pause character "P" (display and non-display model).

3.19.1.2
Busy TOT (sec)

Sets the duration that the Repeater waits (after a phone call is initiated) for the busy channel to become available before ending the phone call setup.

Range:

Maximum	Minimum	Increment
30 sec	1 sec	1 sec

NOTICE:
This feature is supported in Digital mode only.

3.19.1.3
Response TOT (sec)

Sets the duration that the Repeater waits for a subscriber to answer a phone call before ending the phone call setup.

This applies to both the private and talkgroup phone calls (when ringing response is required).

Range:

Maximum	Minimum	Increment
60 sec	6 sec	6 sec

NOTICE:
This feature is supported in Digital mode only.

3.19.1.4
TX Tone Duration (ms)

Configures the duration of the DTMF tone digits in milliseconds (ms) for a given subscriber phone system.

This applies to the access code, de-access code, phone number and over-dial digits which are generated by the subscriber as DTMF tones.

Range:

Maximum	Minimum	Increment
6400 ms	40 ms	20 ms

Range:

Maximum	Minimum	Increment
6375 ms	25 ms	25 ms

NOTICE:
For MOTOTRBO Conventional radios, this feature is supported in Digital mode only.

This feature is applicable to MOTOTRBO Conventional radios and 3600 Trunking capable radios.

3.19.1.5
TX Tone Interval (ms)

Configures the duration of the intervals between the DTMF tone digits in a transmission sequence in milliseconds (ms) for a given subscriber phone system.

This applies to the access code, de-access code, phone number and over-dial digits which are generated by the subscriber as DTMF tones.

Range:

Maximum	Minimum	Increment
6400 ms	40 ms	20 ms

Range:

Maximum	Minimum	Increment
6375 ms	25 ms	25 ms

NOTICE:
For MOTOTRBO Conventional radios, this feature is supported in Digital mode only.

This feature is applicable to MOTOTRBO Conventional radios and 3600 Trunking capable radios.

3.19.1.6
Ring Tone Level (dB)

Configures the level of tone in dB that alerts the radio user to accept a Phone Call and informs the user that the Phone Patch channel is available and the radio is being ringed.

Range:

Maximum	Minimum
-3 dB	-35 dB

NOTICE:
This feature is supported in Digital mode only.

3.19.1.7

Busy Tone Level (dB)

Configures the level of tone in dB that is sounded to the phone user to signal that the system is currently busy.

Range:

Maximum	Minimum	Increment
-6 dB	-22 dB	1 dB

NOTICE:
This feature is supported in Digital mode only.

3.19.1.8

Enable All Call

When enabled, the landline phone user can initiate a phone call to target radio; where the target radio can be any radios in the All Call Group type.

NOTICE:
This feature is supported in Digital mode only.

3.19.1.9

Response Required

Allows the user to enable or disable the need for an incoming talkgroup call to require a radio response before allowing access.

NOTICE:
This feature is supported in Digital mode only.

3.19.2

Target ID (Phone System)

The **Target ID** section of the Phone System set contains the following fields:

3.19.2.1

Length

Sets the expected length of the Target ID.

The target ID are the call type (private, talkgroup or all call), timeslot (Slot Number), and radio/ talkgroup ID entered by the Phone User when initiating a phone call. So, the Target ID Length includes the length of the radio ID/talkgroup ID plus 2 more digits (one for the timeslot and one for the call type).

Range:

Maximum	Minimum	Increment
10	3	1

NOTICE:
This feature is supported in Digital mode only.

3.19.2.2
Entry Time (sec)

Sets the duration that the Repeater waits for the Target ID validation during a landline-to-radio phone call before sending the Deaccess Code to end the call.

Range:

Maximum	Minimum	Increment
60 sec	10 sec	1 sec

NOTICE:
This feature is supported in Digital mode only.

3.19.2.3
Validation Attempts

Defines the number of invalid attempts the repeater will accept during landline-to-radio phone call initiation, after which the repeater will end the call initiation.

Range:

Maximum	Minimum	Increment
3	1	1

NOTICE:
This feature is supported in Digital mode only.

3.19.2.4
Request Tone Level (dB)

Configures the level of tone in dB that is sounded to notify the phone user to begin entering the Target ID via DTMF.

Range:

Maximum	Minimum	Increment
-6 dB	-22 dB	1 dB

NOTICE:
This feature is supported in Digital mode only.

3.19.3
Preconfigured Call (Phone System)

The **Preconfigured Call** section of the Phone System set contains the following fields:

3.19.3.1
Enable (Preconfigured Call)

This check box allows the user to choose whether or not to enable the preconfigured phone call capability of the repeater.

If the preconfigured phone call capability is enabled, the repeater will wait for three seconds after the target ID request tone is played for the user. If the user does not dial any DTMF digit using the phone patch within the three seconds, the repeater will automatically place a preconfigured phone call to the

radio or group of radios that are set in Call Type (Preconfigured) and Call ID (Preconfigured). If the user dials an invalid call ID within the three seconds, the target ID request tone will be replayed to indicate a Retry, where the user can select to re-dial the correct call ID or not to dial any digit. If the user chooses not to re-dial, the repeater will automatically place a preconfigured phone call. If the preconfigured phone call capability is disabled, the repeater will wait indefinitely for the phone user to enter the Call ID using the phone patch.

NOTICE:
This feature is hidden when the Digital or Digital Phone Patch feature is disabled.

3.19.3.2
Call Type (Preconfigured Call)

This drop-down list allows the user to choose which call type to use for the preconfigured phone call.

The available choices are Private Call, Group Call, and All Call.

NOTICE:
This feature is hidden when the Digital or Digital Phone Patch feature is disabled.

This feature is only applicable when Enable (Preconfigured Call) is checked.

The choice All Call is only applicable when Enable All Call is checked.

3.19.3.3
Call ID (Preconfigured Call)

This configuration allows the user to choose which call ID to use for the preconfigured phone call.

NOTICE:
This feature is hidden when the Digital or Digital Phone Patch feature is disabled.

This Group Call ID in a Capacity Plus–Single-Site system, the maximum value is 254 or the Call ID must not allow the user to exceed 254.

This Private Call ID in a Capacity Plus–Single-Site system, the maximum value is 65535 or the Call ID must not allow the user to exceed 65535.

This feature is only applicable when Enable (Preconfigured Call) is checked and Call Type (Preconfigured Call) is set to a value other than All Call.

3.20
Sites Set

The **Sites** set is used to associate neighboring site with the primary site.

The following section contains all the supported fields:

3.20.1
General (Sites)

The **General** section of the Sites set contains the following fields:

3.20.1.1
Max Number of Sites

Selects the maximum number of sites.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver feature are disabled.

For MOTOTRBO SLR Series repeaters models, this feature is hidden and the only value and choice is 15.

This feature is supported in Digital mode only.

3.20.1.2
Max Number of Trunked Repeaters per Site

Displays the maximum number of repeaters per site. This feature is not editable.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site feature is disabled.

This feature must be set to 6 when the value for Max Number of Sites is set to 3.

For MOTOTRBO SLR Series repeater models, this feature is hidden and the value is 8.

This feature is supported in Digital mode only.

3.20.1.3
Site ID (Neighboring Site)

Enters the ID of the site to associate it with neighbor sites.

NOTICE:
This feature is enabled only when Link Type is set to Master.

This ID must match the respective Repeater Site ID (Repeater).

This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver feature are enabled.

This feature is supported in Digital mode only.

3.20.1.4
Reserved Wide Area Channels

Configures the number of channels in a Repeater provisioned for wide area transmissions for the site.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

For MOTOTRBO SLR Series repeater models, this feature has a range from 0 to 16.

This feature is supported in Digital mode only.

3.20.1.5

Neighbor 1

Selects this Neighbor from the list of Site ID's.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

The value of this feature must be in the range of 1 and the maximum of all of Site ID fields in all rows.

This feature must not be set as the value of Site ID in current row.

This feature is supported in Digital mode only.

3.20.1.6

Neighbor 2

Selects this Neighbor from the list of Site ID's.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

The value of this feature must be in the range of 1 and the maximum of all of Site ID fields in all rows.

This feature must not be set as the value of Site ID in current row.

This feature is supported in Digital mode only.

3.20.1.7

Neighbor 3

Selects this Neighbor from the list of Site ID's.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

The value of this feature must be in the range of 1 and the maximum of all of Site ID fields in all rows.

This feature must not be set as the value of Site ID in current row.

This feature is supported in Digital mode only.

3.20.1.8
Neighbor 4

Selects this Neighbor from the list of Site ID's.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

The value of this feature must be in the range of 1 and the maximum of all of Site ID fields in all rows.

This feature must not be set as the value of Site ID in current row.

This feature is supported in Digital mode only.

3.20.1.9
Neighbor 5

Selects this Neighbor from the list of Site ID's.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

The value of this feature must be in the range of 1 and the maximum of all of Site ID fields in all rows.

This feature must not be set as the value of Site ID in current row.

This feature is supported in Digital mode only.

3.20.1.10
Neighbor 6

Selects this Neighbor from the list of Site ID's.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

The value of this feature must be in the range of 1 and the maximum of all of Site ID fields in all rows.

This feature must not be set as the value of Site ID in current row.

This feature is supported in Digital mode only.

3.21
Talkgroups Set

The **Talkgroups** set associates any available RX Group list to the channel for reception. The user can listen to any Group in this list when there is any activity on it and talk back within the Group Call hang time. This is also known as a Group Scan.

The following section contains all the supported fields:

3.21.1
General (Talkgroups)

The **General** section of the Talkgroups set contains the following fields:

3.21.1.1
All Wide Area Talkgroups

Allows the user to enable or disable all the wide area calls listed in the Wide Area Talkgroups table.

When enabled, all the Group Calls listed in the table will be wide area on all the sites.

NOTICE:
This feature is enabled only when Link Type is set to Master.

This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is supported in Digital mode only.

3.21.1.2
Call ID (Wide Area Talkgroups)

Enters the ID of the Group Call to be configured as wide area call for the selected site(s).

Only Wide Area Talkgroups should be configured in this Talkgroups table.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

This feature is disabled when All Wide Area Talkgroups is enabled.

This ID must match the respective subscriber radio Group ID.

the user does not need to configure the Local Area Talkgroups. The system assumes that all talkgroups that are not configured in the Talkgroups table, will be Local Area Talkgroups.

The Local Area Talkgroup ID can be re-used at different sites of the system, since they will not be transmitted across sites.

This feature is supported in Digital mode only.

3.21.1.3
Site 1

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master. This dependency is not available for Next Generation Repeaters.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.4
Site 2

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.5
Site 3

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.6
Site 4

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.7
Site 5

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.8
Site 6

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.9
Site 7

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.10
Site 8

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.11
Site 9

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.12
Site 10

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.13
Site 11

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.14
Site 12

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.15
Site 13

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.16
Site 14

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master. This dependency is not available for Next Generation Repeaters.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.17
Site 15

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master. This dependency is not available for Next Generation Repeaters.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.18
Site 16

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master. This dependency is not available for Next Generation Repeaters.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.19
Site 17

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master. This dependency is not available for Next Generation Repeaters.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.20
Site 18

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master. This dependency is not available for Next Generation Repeaters.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.21
Site 19

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master. This dependency is not available for Next Generation Repeaters.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.21.1.22
Site 20

Configures this Site to be associated with the Call ID.

NOTICE:
This feature is hidden when the Capacity Plus–Multi-Site and Satellite Receiver features are disabled.

This feature is enabled only when Link Type is set to Master. This dependency is not available for Next Generation Repeaters.

This feature is disabled when All Wide Area Talkgroups is enabled.

This feature is supported in Digital mode only.

3.22
Voice Announcement Set

The **Voice Announcement** set allows the user to map Motorola pre-recorded voice files to operation items (for example: zone, channel, zone list, and programmable buttons), configure the voice announcement parameters, and load the voice file from Radio Management into the radio. The recorded content is available in multiple languages and played when the user triggers the relevant operation item or a certain operation occurs such as channel announcement during the radio power-up.

The application only accepts voice announcement files in the following format:

- 16 Bits, 8K, mono sample, pulse-code modulation (PCM) audio.
- 8 Bits, 8K, mono sample, Mu-law.

The following sections contain all the supported fields:

3.22.1
General (Voice Announcement)

The **General** section of the Voice Announcement set contains the following fields:

3.22.1.1
Announcement Type

This drop-down list allows the user to configure the Announcement Type. The options are None, Voice Announcement Files, and Text to Speech.

The following selections are supported:

None
Select this option if the user does not want any announcement types in the configuration.

Voice Announcement Files
Select this option if the user wants to use Voice Announcement Files as the announcement type. When enabled, the user can map MOTOTRBO pre-recorded voice file to operation items (e.g. zone, channel, zone list and programmable button), configure the voice announcement parameters, and load the voice file from RM into the radio. The recorded content is available in multiple languages and played when the user triggers the associated operation item or certain operation occurs such as channel announcement during the radio power up. The voice file settings can be custom configured at the Manage Voice Announcement menu. See Button Features for the description of each feature functionality.

Text to Speech
Select this option if the user wants to use Voice Text to Speech as the announcement type. This option is hidden if the Text to Speech feature is disabled.

3.22.1.2
Priority

Configures the priority of voice announcement over voice call.

High
Voice announcement has a higher priority than voice call. For example, if the user joins an ongoing call, the user waits until the channel announcement is completed before hearing the call.

Low
Voice call has a higher priority than voice announcement. For example, if the user joins an ongoing call, the channel announcement is truncated to allow the audio from the call to be heard first.

3.22.2
File List (Voice Announcement)

The **File List** section of the Voice Announcement set contains the following fields:

3.22.2.1
Select and All

This button selects all the file names of the available Voice Announcement files.

3.22.2.2
Select and None

This button deselects all the file names of the available Voice Announcement files.

3.22.2.3
Selected

This button selects a file name of the available Voice Announcement files.

3.22.2.4
File Name

This field displays the file names of the available Voice Announcement files.

3.22.3
Voice Announcement File Selection (Voice Announcement)

The **Voice Announcement File Selection** section of the Voice Announcement set contains the following fields:

3.22.3.1
Set Voice Files

Automatically configures a voice file to each parameter under File Selection that is set to None, if the filename of the voice file matches the parameter name.

The -, _, and white space characters are ignored during the case-insensitive matching process.

NOTICE:
This button is disabled if there is no voice file available.

3.22.3.2
Clear Voice Files

Automatically sets each parameter under File Selection to None.

NOTICE:
This button is disabled if there is no voice file available.

3.22.3.3
Intelligent Audio On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files. This feature is disabled if None is the only choice.

Refer to the MOTOTRBO Experience #1 Intelligent Audio video to view the feature demonstration.

3.22.3.4
Intelligent Audio Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files. This feature is disabled if None is the only choice.

Refer to the MOTOTRBO Experience #1 Intelligent Audio video to view the feature demonstration.

3.22.3.5
All Alert Tones On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.6
All Alert Tones Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.7
Backlight Auto On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.8
Backlight Auto Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.9
Battery Low

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is only applicable for SL Series Commercial radios.

3.22.3.10
Battery Medium

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is only applicable for SL Series Commercial radios.

3.22.3.11
Battery High

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is only applicable for SL Series Commercial radios.

3.22.3.12
Brightness

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.13
Brightness level 1

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is only applicable for SL Series Commercial radios.

3.22.3.14
Brightness level 2

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is only applicable for SL Series Commercial radios.

3.22.3.15
Brightness level 3

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is only applicable for SL Series Commercial radios.

3.22.3.16
Brightness level 4

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is only applicable for SL Series Commercial radios.

3.22.3.17
Bluetooth Connect

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.18
Bluetooth Disconnect

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.19
Route Audio to Bluetooth

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.20
Route Audio to Speaker

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.21
Call Forwarding Set

Allows the user to configure voice announcement for Call Forwarding Set button choice. The choices are "None" and all available Voice Announcement files..

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.22
Call Forwarding Clear

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.23
Call Alert

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.24
Call Log

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.25
Contacts

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.26
Day Mode

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.27
Night Mode

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.28
Emergency Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.29
Emergency On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.30

External Public Address On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.31

External Public Address Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.32

High Power

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.33

Low Power

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.34

Horn & Lights On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.35

Horn & Lights Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.36
Internal Public Address On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.37
Internal Public Address Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.38
Locked

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.39
Unlocked

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.40
Manual Dial Private Call

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.41
Manual Site Roaming

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is hidden if the IP Site Connect and Capacity Plus–Multi-Site features are disabled.

This feature is disabled if None is the only choice.

3.22.3.42
Microphone AGC On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.43
Microphone AGC Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.44
Monitor

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.45
Nuisance Delete

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.46
Permanent Monitor On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.47
Permanent Monitor Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.48
Privacy On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.49
Privacy Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.50
Radio Check

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.51
Radio Disable

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.52
Radio Enable

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.53
Remote Monitor

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.54
Repeater Mode

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.55
Talkaround Mode

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.56
Scan On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.57
Scan Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.58
Site Locked

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is hidden if the IP Site Connect and Capacity Plus–Multi-Site features are disabled.

This feature is disabled if None is the only choice.

3.22.3.59
Site Unlocked

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is hidden if the IP Site Connect and Capacity Plus–Multi-Site features are disabled.

This feature is disabled if None is the only choice.

3.22.3.60

Messages

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.61

Tight Squelch

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.62

Normal Squelch

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.63

Status

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.64

Remote Dekey

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.65

VOX On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.66
VOX Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.67
Voice Announcement On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.68
Voice Announcement Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.69
One Touch Home Revert

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.70
One Touch Private Call

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.71
One Touch Group Call

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.72
One Touch Call Alert Sending

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.73
One Touch Text Message Sending

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.74
One Touch Status Sending

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.75
One Touch Message Sending

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.76
One Touch Telegram Sending

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.77
One Touch Phone Call

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is supported in Digital mode only.

3.22.3.78

Telemetry Button 1

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.79

Telemetry Button 2

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.80

Telemetry Button 3

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.81

Option Board Feature 1

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.82

Option Board Feature 2

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.83

Option Board Feature 3

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.84
Option Board Feature 4

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.85
Option Board Feature 5

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.86
Option Board Feature 6

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.87
Option Board Feature 7

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.88
Option Board Feature 8

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.89
Option Board Feature 9

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.90

Option Board Feature 10

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.91

Option Board Feature 11

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.92

Option Board Feature 12

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.93

Option Board Feature 13

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.94

Option Board Feature 14

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.95

Option Board Feature 15

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.96
Display Radio Name

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.97
GNSS On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.98
GNSS Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.99
Job Tickets

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is supported in Digital mode only.

3.22.3.100
Action List

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is supported in Digital mode only.

This feature is applicable to SL Series radios.

3.22.3.101
Phone Call

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is supported in Digital mode only.

3.22.3.102

Phone Manual Dial

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is supported in Digital mode only.

3.22.3.103

Phone Exit

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is supported in Digital mode only.

3.22.3.104

Bluetooth Discoverable On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is supported in Digital mode only.

3.22.3.105

Bluetooth Discoverable Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is supported in Digital mode only.

3.22.3.106

Ring Alert Type

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is supported in Digital mode only.

This feature is applicable to SL Series radios.

3.22.3.107
Notifications

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is supported in Digital mode only.

This feature is applicable to SL Series radios.

3.22.3.108
Mandown On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.109
Mandown Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.110
Mic Distortion On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.111
Mic Distortion Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.112
AF Suppressor On

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files. This feature is disabled if None is the only choice.

Refer to the MOTOTRBO Experience #2: Acoustic Feedback Suppressor video to view the feature demonstration.

3.22.3.113

AF Suppressor Off

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files. This feature is disabled if None is the only choice.

Refer to the MOTOTRBO Experience #2: Acoustic Feedback Suppressor video to view the feature demonstration.

3.22.3.114

Scrambling On

Allows the user to configure voice announcement for the Scrambling On/Off button choice. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is not available for NA region.

3.22.3.115

Scrambling Off

Allows the user to configure voice announcement for the Scrambling On/Off button choice. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is not available for NA region.

3.22.3.116

Scrambling 3.29 kHz

Allows you to configure voice announcement for the Scrambling Code Toggle button choice when Scrambling Frequency is set to 3.29 kHz. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is not available for NA region.

3.22.3.117

Scrambling 3.39 kHz

Allows you to configure voice announcement for the Scrambling Code Toggle button choice when Scrambling Frequency is set to 3.39 kHz. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is not available for NA region.

3.22.3.118

Scrambling 3.5 kHz

Allows you to configure voice announcement for the Scrambling Code Toggle button choice when Scrambling Frequency is set to 3.5 kHz. The choices are None and all available voice announcement files.

NOTICE: This feature is disabled if None is the only choice.

3.22.3.119

Flexible Rx List On

Allows the user to configure voice announcement for Flexible Rx List On button choice. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.22.3.120

Flexible Rx List Off

Allows the user to configure voice announcement for Flexible Rx List Off button choice. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is hidden when the Capacity Plus–Single-Site and Capacity Plus–Multi-Site features are disabled.

3.22.3.121

Battery Li-Ion Selected

Allows the user to configure voice announcement for Battery Li-Ion Selected choice. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.122

Battery NiMH Selected

Allows the user to configure voice announcement for Battery Ni-MH Selected choice. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.123

Invalid Battery and Charger

Allows the user to configure voice announcement for Invalid Battery and Charger. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is only applicable for SL Series Commercial radios.

3.22.3.124

Invalid Battery

Allows the user to configure voice announcement for Invalid Battery choice. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is only applicable for SL Series Commercial radios.

3.22.3.125

Charging Error

Allows the user to configure voice announcement for Charging Error choice. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is only applicable for SL Series Commercial radios.

3.22.3.126

Invalid Charger

Allows the user to configure voice announcement for Invalid Charger choice.

The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is only applicable for SL Series Commercial radios.

3.22.3.127

Cancel

Allows the user to configure voice announcement for Cancel button choice. The choices are "None" and all available Voice Announcement files.

3.22.3.128

Accessory Speaker Selected

This drop-down list allows the user to configure voice announcement for Switch Speaker (Accessory Speaker Selected) button choice. .

The choices are None and all available Voice Announcement files

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.129

Radio Speaker Selected

This drop-down list allows the user to configure voice announcement for Switch Speaker (Radio Speaker Selected) button choice.

NOTICE:
This feature is disabled if None is the only choice.

3.22.3.130

Trill Enhancement On

This drop-down list allows the user to configure voice announcement for Trill Enhancement On button choice.

The choices are None and all available Voice Announcement files. This feature is disabled if None is the only choice.

Refer to the MOTOTRBO Experience #14: Trill Enhancement video to view the feature demonstration.

3.22.3.131

Trill Enhancement Off

This drop-down list allows the user to configure voice announcement for Trill Enhancement Off button choice.

The choices are "None" and all available Voice Announcement files. This feature is disabled if None is the only choice.

Refer to the MOTOTRBO Experience #14: Trill Enhancement video to view the feature demonstration.

3.22.3.132

Home Channel Reminder Silenced

This field allows the user to configure voice announcement for Silence Home Channel Reminder button choice.

NOTICE: This feature is be not editable if "None" is the only choice

3.22.3.133

New Home Channel

This field allows the user to configure voice announcement for Reset Home Channel button choice.

NOTICE: The choices are "None" and all available Voice Announcement files.

3.22.3.134

Non-Home Channel

This field allows the user to configure voice announcement that will be used when a Home Channel Reminder occurs.

NOTICE: The choices are "None" and all available Voice Announcement files.

3.22.3.135
Wrong Battery

This drop-down list allows the user to configure voice announcement for Wrong Battery button choice. The choices are "None" and all available Voice Announcement files.

NOTICE: This feature is disabled if None is the only choice.

3.22.3.136
Wi-Fi On

This drop-down ist allows the user to configure voice announcement for the Wi-Fi On button option. The options are "None" and all available Voice Announcement files.

NOTICE:

- This feature is disabled if None is the only choice.
- This feature is hidden when the Wi-Fi feature is disabled.

3.22.3.137
Wi-Fi Off

This drop-down list allows the user to configure voice announcement for the Wi-Fi Off button option. The options are "None" and all available Voice Announcement files.

NOTICE:

- This feature is disabled if None is the only choice.
- This feature is hidden when the Wi-Fi feature is disabled.

3.22.3.138
Wi-Fi Enabled

Allows the user to configure voice announcement for the Wi-Fi "Enabled" button option. The options are "None" and all available Voice Announcement files.

NOTICE:

- This feature is disabled if None is the only choice.
- This feature is hidden when the Wi-Fi feature is disabled.

3.22.3.139
Wi-Fi Disabled

Allows the user to configure voice announcement for the Wi-Fi "Disabled" button option. The options are "None" and all available Voice Announcement files.

NOTICE:

- This feature is disabled if None is the only choice.
- This feature is hidden when the Wi-Fi feature is disabled.

3.22.3.140
Wi-Fi Connected

Allows the user to configure voice announcement for the Wi-Fi "Connected" button option. The options are "None" and all available Voice Announcement files.

NOTICE:

- This feature is disabled if None is the only choice.
- This feature is hidden when the Wi-Fi feature is disabled.

3.22.3.141
Vibrate Style

Allows the user to select vibrate style.

3.22.3.142
Wrong Battery

This drop-down list allows the user to configure voice announcement for Wrong Battery button choice. The choices are "None" and all available Voice Announcement files.

NOTICE: This feature is disabled if None is the only choice.

3.22.3.143
Indoor Location On

Allows the user to configure voice announcement for Indoor Location On button choice. The choices are "None" and all available Voice Announcement files.

3.22.3.144
Indoor Location Off

Allows the user to configure voice announcement for Indoor Location On button choice. The choices are "None" and all available Voice Announcement files.

3.22.3.145
Transmit Inhibit On

Allows the user to configure voice announcement for Transmit Inhibit On button choice. The choices are "None" and all available Voice Announcement files.

NOTICE:

- This feature is disabled if None is the only choice.
- This feature is hidden when the Transmit Inhibit feature is disabled.

3.22.3.146
Transmit Inhibit Off

Allows the user to configure voice announcement for Transmit Inhibit Off button choice. The choices are "None" and all available Voice Announcement files.

NOTICE:

- This feature is disabled if None is the only choice.
- This feature is hidden when the Transmit Inhibit feature is disabled.

3.22.3.147

Ring Alert Type Silent

Allows the user to configure voice announcement for Ring Alert Type Silent button choice. The choices are "None" and all available Voice Announcement files.

NOTICE:

- This feature is disabled if None is the only choice.

3.22.3.148

OTAR Rekey Request

Allows the user to configure voice announcement when a OTAR Rekey Request occurs. The choices are "None" and all available Voice Announcement files.

NOTICE:

- This feature is disabled if None is the only choice.
- This feature ishidden when the OTAR feature is disabled.

3.22.3.149

One Touch Predefined Talkgroup Call

This list allows the user to configure the voice announcement for One Touch Predefined Talkgroup Call button choice.

The choices are "None" and all available Voice Announcement files.

NOTICE: This feature is disabled if None is the only choice.

3.22.3.150

Response Inhibit On

This list allows the user to configure the voice announcement for Response Inhibit On button choice. The choices are "None" and all available Voice Announcement files.

NOTICE: This feature is disabled if None is the only choice.

3.22.3.151

Response Inhibit Off

This list allows the user to configure the voice announcement for Response Inhibit Off button choice. The choices are "None" and all available Voice Announcement files.

NOTICE: This feature is disabled if None is the only choice.

3.22.3.152

WAVE Channel List

This drop-down list allows the user to associate a voice announcement file to the WAVE Channel List button.

The choices are "None" and all available Voice Announcement files.

3.22.3.153
WAVE Channel 1

This feature allows the user to configure voice announcements for the WAVE Channel 1.

The choices are "None" and all available Voice Announcement files.

3.22.3.154
WAVE Channel 2

This feature allows the user to configure voice announcements for the WAVE Channel 2.

The choices are "None" and all available Voice Announcement files.

3.22.3.155
WAVE Channel 3

This feature allows the user to configure voice announcements for the WAVE Channel 3.

The choices are "None" and all available Voice Announcement files.

3.22.3.156
WAVE Channel 4

This feature allows the user to configure voice announcements for the WAVE Channel 4.

The choices are "None" and all available Voice Announcement files.

3.22.3.157
WAVE Channel 5

This feature allows the user to configure voice announcements for the WAVE Channel 5.

The choices are "None" and all available Voice Announcement files.

3.22.3.158
WAVE Channel 6

This feature allows the user to configure voice announcements for the WAVE Channel 6.

The choices are "None" and all available Voice Announcement files.

3.22.3.159
WAVE Channel 7

This feature allows the user to configure voice announcements for the WAVE Channel 7.

The choices are "None" and all available Voice Announcement files.

3.22.3.160
WAVE Channel 8

This feature allows the user to configure voice announcements for the WAVE Channel 8.

The choices are "None" and all available Voice Announcement files.

3.22.3.161
Switching to Radio

This feature allows the user to configure voice announcements by toggling to radio mode.

The choices are "None" and all available Voice Announcement files.

3.22.3.162
Switching to Wave

This feature allows the user to configure voice announcements by toggling to WAVE mode.

The choices are "None" and all available Voice Announcement files.

3.22.3.163
Call Priority Level Normal

This drop-down list allows the user to configure a voice announcement that plays when the Default Call Priority Level is set to **Normal**.

The Default Call Priority Level on page 778 is configured under the General section of the Personality Set on page 764.

The choices are **None** and all available Voice Announcement files.

3.22.3.164
Call Priority Level High

This drop-down list allows the user to configure a voice announcement that plays when the Default Call Priority Level is set to **High**.

The Default Call Priority Level on page 778 is configured under the General section of the Personality Set on page 764.

The choices are **None** and all available Voice Announcement files.

3.22.3.165
Glove Mode On

This list allows the user to configure the voice announcement for Glove Mode On button choice.

The choices are "None" and all available Voice Announcement files.

NOTICE: This feature is disabled if None is the only choice.

3.22.3.166
Glove Mode Off

This list allows the user to configure the voice announcement for Glove Mode Off button choice.

The choices are "None" and all available Voice Announcement files.

NOTICE: This feature is disabled if None is the only choice.

3.22.4
Text to Speech (Voice Announcement)

The **Text to Speech** section of the Voice Announcement set contains the following fields:

3.22.4.1
Dictionary Entry

This edit box allows the user to type a word or phrase to modify the default Text to Speech pronunciation.

NOTICE:

- If the value of this field is the same as another Dictionary Entry field, this edit box resets this field to the previous value. This dependency does not apply if the value of this field is blank.
- This field supports a maximum of 40 characters.

3.22.4.2
Pronunciation

This edit box allows the user to specify a custom pronunciation for a particular word or phrase.

NOTICE:

- This field supports a maximum of 100 characters.

3.22.4.3
Voice Pack

This drop-down list allows the user to choose the voice pack to use for Text to Speech.

The choices are None, Do Not Change, and all voice packs that are installed on this computer.

NOTICE:
This drop-down list shows each voice pack in the following format; Language (Locale): Speaker Name [Gender]. [Gender] is the Unicode for a Female Sign or a Male Sign character, depending on the speaker. For example, English (United States): Allison ♀.

When the user opens a .ctb file or read a radio, if the current value is a voice pack that is not installed on this computer, the user must change the value in the .ctb file to Do Not Change. the user must not change the underlying value in the .ctb file or radio. The option Do Not Change is not applicable in any other case. This dependency is not applicable for RM.

The option None is only applicable when the user loads a no-voice pack into the radio or when Announcement Type is not set to Text to Speech.

This feature is greyed out and set to None when Announcement Type is not set to Text to Speech. The previous value of this field (if any) is preserved until the user saves the .ctb file.

The option Do Not Change is only applicable when the user loads a voice pack into the radio.

This feature depends on the Text to Speech feature.

3.22.4.4
Speech Rate

This drop-down list allows the user to set the speed of the Text to Speech engine. This determines how fast phrases are spoken.

3.22.4.5
Channels (Text to Speech)

This check box allows the user to enable or disable the reading of channel names using Text to Speech.

NOTICE:
This feature is disabled if None is the only choice.

3.22.4.6
Zones (Text to Speech)

This check box allows the user to enable or disable the reading of zone names using Text to Speech.

3.22.4.7
Buttons (Text to Speech)

This check box allows the user to enable or disable the reading of button names using Text to Speech.

3.22.4.8
Text Messages (Text to Speech)

This check box allows the user to enable or disable the reading of text messages using Text to Speech.

3.22.4.9
Job Tickets (Text to Speech)

This check box allows the user to enable or disable the reading of job tickets using Text to Speech.

NOTICE:
This feature depends on the Text to Speech feature.

3.23
Indoor Location Set

The **Indoor Location** set allows the user to enable the Indoor Location feature, set scan interval times, and configure beacon list items.

The following sections contain all the supported fields:

3.23.1
General (Indoor Location)

The **General** section of the Indoor Location set contains the following fields:

3.23.1.1
Indoor Location

This feature allows the radio to detect its location by communicating with Beacons.

3.23.1.2
Scan Interval on Time (ms)

This feature sets the scanning on duration of the iBeacon device.

Range:

Maximum	Minimum	Increment
6553500 ms	100 ms	100 ms

3.23.1.3
Scan Interval off Time (ms)

This feature sets the scanning off duration for iBeacon device.

Range:

Maximum	Minimum	Increment
6553500 ms	100 ms	100 ms

NOTICE: When the Scan Interval off time is set to 0, the subscriber performs a continuous scan. The battery consumption depends on the scanning rate.

3.23.1.4
Show Beacon Alias

This feature allows for the Beacon Alias to be displayed in the RM system.

3.23.2
Beacon List (Indoor Location)

The **Beacon List** section of the Indoor Location set contains the following fields:

3.23.2.1
Beacon Alias

This field allows the user to enter a 16 character name that identifies the Beacon in the Indoor Location List Items.

3.23.2.2
Beacon UUID

The field is a 16-byte hex character string (32 alphanumeric characters) that is used as the Universally Unique IDentifier (UUID) for the Beacon.

3.24
Job Tickets Set

The **Job Tickets** set is used to configure job ticket status folders. A maximum of 12 job ticket status folders can be configured in RM, allowing radio users to reply to up to 12 statuses.

Based on the MOTOTRBO Text Message feature, a work flow management system such as HotSOS can be set up between the controller and the subscriber units. The radio users are able to access job tickets assigned to them through the radio menu or a short/long programmable button press.

NOTICE:

- When the radio write operation is in progress, the radio ignores any tickets received.
- This feature is supported in Digital mode only.

The following section contains all the supported fields:

3.24.1
General (Job Tickets)

The **General** section of the Job Tickets set contains the following fields:

3.24.1.1
Job Ticket Server ID

This feature allows the user to configure the Job Ticket server ID.

The range is 0 to 16776415.

This is a radio-wide feature.

NOTICE:
Blank value is a valid choice for this control.

This feature is supported in Digital, Capacity Plus–Single-Site and Capacity Plus–Multi-Site mode.

3.24.1.2
Job Ticket Server IP

This feature is read-only and allows the user to view the IP address of the Job Ticket server.

The **Job Ticket Server IP Address** refers to the air interface network IP address of the Job Ticket server. It is derived from the Job Ticket Radio ID and CAI Network. This field defines the Job Ticket Raw Data destined Server IP Address.

This is a radio-wide feature.

NOTICE:
The default value for this feature is set to 0.0.0.0 when the value of Job Ticket Server ID is blank.

The value in the first octet is always 1+ the value in CAI Network.

The value in the last three octets correspond to the value in XCMP Server ID.

This feature is supported in Digital, Capacity Plus–Single-Site and Capacity Plus–Multi-Site mode.

3.24.1.3
Job Ticket Server UDP Port

The **Job Ticket Server UDP Port** specifies a dedicated port number for the target destination (for example, computer or radio) to support the job ticket services.

The User Datagram Protocol (UDP) is one of the core Internet protocol for sending short messages (datagram) between devices. UDP enables communication between these devices though a unique port number. The internal radio job ticket server receive UDP port is always 4007.

Range:

Maximum	Minimum	Increment
65535	1024	1

NOTICE:
The port numbers for the Network Services; for example, ARS, TMS, Telemetry, and so on, must always be different to avoid conflict.

This feature is supported in Digital mode only.

3.24.1.4
New Protocol

This feature allows the user to use either the legacy Job Ticket or the new Job Ticket Protocol feature for radios that are not in Capacity Max mode.

When enabled, the radio that is not in Capacity Max mode can behave and function similarly as in Capacity Max mode.

For example, the radio can share the same inbox and template. The radio hides the legacy Job Ticket feature and does not support any legacy job ticket upgrades. Tickets received in Capacity Max mode will be displayed in Non-Capacity Max mode. Some user actions are blocked. The user can reuse the User Sign in/out status in non-Capacity Max mode. The sign in/out status for Non-Capacity Max and Capacity Max modes are not shared. However, if the user signs in with the same user ID between these two modes, the user can access the same ticket.

3.24.1.5
Index (Job Tickets)

Displays the number of the job ticket status folder.

NOTICE:
When renaming, the value must be unique within the tree node.

If the user tries to set this field to blank, this feature resets to the previous value.

This feature is supported in Digital mode only.

3.24.1.6
Action/Response

Specifies a text for an action or a response of a job ticket, such as Start or Complete.

The user may enter up to a maximum of 16 characters. Valid characters are alphanumerics, spaces and special characters.

NOTICE:
This feature is supported in Digital mode only.

3.24.1.7
Status Folder

Configures a name for the status folder.

The status folder provides information on the type and state of the action/response of a job ticket. The user may enter up to a maximum of 16 characters. Valid characters are alphanumerics, spaces and special characters.

NOTICE:
This feature is supported in Digital mode only.

3.24.1.8
Last State Flag

Marks an entry to have the highest priority be removed from the job ticket list in the radio when the list is full.

NOTICE:
This feature is supported in Digital mode only.

3.25
Job Tickets Options Set

The **Job Tickets Options** set allows the user to configure up to 40 job ticket option list items. Job ticket option list items are assigned to Job Ticket Templates.

The following section contains all supported fields:

3.25.1
General (Job Tickets Options)

The **General** section of the Job Tickets Options set contains the following fields:

3.25.1.1
Option List Name

Displays the title of the individual option list. User can add up to 40 lists. To add an option list, hover to the Option List tree node, right click, and select Add. The application also allows the user to configure an Alias consisting of 1 to 16 characters. To rename an option list, hover to the desired list, right click, and select Rename.

NOTICE:
This feature is non-editable.

This feature is supported in Digital mode only.

3.25.1.2
Position

This edit box displays the position numbers of the Job Ticket Options in the radio.

This is the first column in the grid control for Job Ticket Option List.

NOTICE:
Order of the position is in ascending order, starting from position 1 to maximum number of Job Ticket Options available.

This feature is not editable.

This feature is supported in Digital mode only.

3.25.1.3
Index

This edit box allows the user to set the option index.

For each Job Ticket Option List Option, the application allows the user to configure an Index consisting of 1 to 5 characters.

NOTICE:
When renaming, this value of this field is unique within the tree node.

This feature is supported in Digital mode only.

3.25.1.4
Name

This edit box allows the user to set the option name.

For each option name, the application allows the user to configure a Name consisting of 1 to 16 characters.

NOTICE:
When renaming, this value of this field is unique within the tree node.

This feature is supported in Digital mode only.

3.26
Job Tickets Templates Set

The **Job Tickets Templates** set allows the user to configure up to 5 job tickets templates.

The following section contains all supported fields:

3.26.1
General (Job Tickets Templates)

The **General** section of the Job Tickets Templates set contains the following fields:

3.26.1.1
Template Name

This field allows the user to enter a name that uniquely identifies the Job Ticket Template set.

3.26.1.2
Tag

The field allows the user to enter a Tag (name) consisting of 1-3 characters.

NOTICE:
If the user tries to set this field to blank, this field is reset to the default value.

This feature is supported in Digital mode only.

3.26.1.3
Position

This edit box displays the position numbers of the Job Ticket Template Items in the radio.

This is the first column in the grid control for Job Ticket Template.

NOTICE:
Order of the position is in ascending order, starting from position 1 to maximum number of Job Ticket Template Items available.

This feature is not editable.

This feature is supported in Digital mode only.

3.26.1.4
Name

This edit box allows the user to set the template item name.

The application allows the user to configure a name consisting of 1 to 16 characters.

NOTICE:
When renaming, the value is unique within the tree node.

This feature is supported in Digital mode only.

3.26.1.5
Tag

The field allows the user to enter a template item tag consisting of 1-3 characters.

NOTICE:
If the user tries to set this field to blank, this field is reset to the default value.

This feature is supported in Digital mode only.

3.26.1.6
Type

This drop-down list allows the user to select the input type for this template item.

Available choices are Text, Numeric, or Option List.

NOTICE:
The choice Option List is only shown when there is at least one Option List under Options.

This feature is supported in Digital mode only.

3.26.1.7
Option List

This drop-down list allows the user to configure each of the Job Ticket Template Item to be connected to a specific Option List.

NOTICE:
This feature is greyed out when Type is set to Text or Numeric.

The choice None is only shown when there are no Option Lists under Options.

When the choice None is not shown, the default value is the first Option List under Options.

This feature is supported in Digital mode only.

3.26.1.8
Length

This field allows the user to set the maximum length that can be entered for this Template Item.

This applies when entering data in the radio or as the Original Text.

NOTICE:
This feature is greyed out when Type is set to Option List.

When editing, Original Text is reset to the default value if the length's new value is shorter than the length of Original Text.

When editing, this feature is set to the minimum value if the new value is blank.

When editing, if the new value is out of range, this feature is set to the closest value in the range (either the minimum or maximum value.

The maximum value for this feature is 15 when Type is set to Numeric.

The maximum value for this feature is 127 when Type is set to Option List or Text.

This feature is supported in Digital mode only.

3.26.1.9
Original Text

This edit box allows the user to specify an initial value for this template item.

The user can use this value as it is or changed the value on the radio.

NOTICE:
This feature is greyed out when Type is set to Option List.

When editing, this feature is reset to the previous value if the new value exceeds the value of Length.

When editing, this feature is reset to the previous value if the new value has any characters other than digits (0-9) and Type is set to Numeric.

This feature is supported in Digital mode only.

3.27
Mandown Set

The **Mandown** set is used to enable or disable the radio mandown feature. Mandown is a channel-wide feature. It triggers an emergency procedure in situations where the radio is horizontal or left still for longer than the pre-programmed time.

The following section contains the supported field:

3.27.1
General (Mandown)

The **General** section of the Mandown set contains the following fields:

3.27.1.1
Allow User Control

Allows the user to enable or disable the Radio Mandown feature.

If enabled, the Radio Mandown feature can be toggled via the radio menu or programmable buttons in the radio.

3.28
Mandown Profiles Set

The **Mandown Profiles** set is used to configure all fields related to the radio mandown feature.

The following sections contain all the supported fields:

3.28.1
General (Mandown Profiles)

The **General** section of the Mandown Profiles set contains the following fields:

3.28.1.1
Name

Configures a name for the Radio Mandown Profile that a conventional personality can be connected to.

3.28.1.2
Type

Configures the type of radio behavior to trigger the Radio Mandown feature.

Angle
The radio is placed in an angle lower than the Activation Angle (degree) for the duration of Angle Pre-Alarm Duration (sec).

Movement
The radio is in a constant motion for the duration of Movement Pre-Alarm Duration (sec).

No-Movement
The radio is in a stationary position for the duration of No-Movement Pre-Alarm Duration (sec).

Angle or No-Movement
The radio is either in the Angle or No-Movement Mandown scenario.

3.28.1.3
Sensor Sensitivity

Configures the sensor sensitivity for the alarm trigger of the Radio Mandown feature.

Minimum
Requires four seconds to detect angle change and start the Angle Pre-Alarm Duration (sec) for Angle alarm, or a gravitational force of 1.8g onwards to start the Movement Pre-Alarm Duration (sec)/No-Movement Pre-Alarm Duration (sec) for Movement/No-Movement alarm.

Medium
Requires two seconds to detect angle change and start the Angle Pre-Alarm Duration (sec) for Angle alarm, or a gravitational force of 1.2g onwards to start the Movement Pre-Alarm Duration (sec)/No-Movement Pre-Alarm Duration (sec) for Movement/No-Movement alarm.

Maximum
Requires one second to detect angle change and start the Angle Pre-Alarm Duration (sec) for Angle alarm, or a gravitational force of 0.7g onwards to start the Movement Pre-Alarm Duration (sec)/No-Movement Pre-Alarm Duration (sec) for Movement/No-Movement alarm.

3.28.1.4
Volume (dB)

Configures the Radio Mandown volume to use when the Radio Mandown feature is triggered.

When the Radio Mandown feature is turned off, the radio uses back the current radio knob volume.

Range:

Maximum	Minimum	Increment
10 dB	1 dB	1 dB

NOTICE:
This feature value changes to Auto if 0 is entered.

3.28.1.5
Alert Repeat Period (sec)

Configures the interval at which the alert tone is sounded when the Mandown feature is triggered.

Range:

Maximum	Minimum	Increment
10 sec	1 sec	1 sec

NOTICE:
This feature value changes to Disabled if 0 is entered. A value of 0 results in the radio playing the tone only once, i.e. when the Radio Mandown feature is triggered.

3.28.1.6
Disabled Alert Repeat Period (sec)

Configures the interval at which the alert tone is sounded when the Radio Mandown feature is turned off.

Range:

Maximum	Minimum	Increment
600 sec	10 sec	1 sec

NOTICE: This feature value changes to Disabled if 9 is entered that means the disable notification will not be repeated at the specified interval.

3.28.2
Angle (Mandown Profiles)

The **Angle** section of the Mandown Profiles set contains the following fields:

3.28.2.1
Activation Angle (degree)

Configures the threshold angle to activate the Radio Mandown feature.

When the radio is detected to tilt below this threshold angle, the radio is monitored for the duration of Angle Pre-Alarm Duration (sec) before the Radio Mandown feature is triggered. The available choices are "30", "45", and "60".

3.28.2.2
Angle Pre-Alarm Duration (sec)

Sets the duration to wait before triggering the Radio Mandown feature.

Range:

Maximum	Minimum	Increment
3600 sec	1 sec	1 sec

3.28.2.3
Angle Alarm Duration (sec)

Sets the duration that the Radio Mandown alert tone will sound after the Angle Pre-Alarm Duration (sec) has expired.

After this duration, the radio enters into the emergency mode.

Range:

Maximum	Minimum	Increment
3600 sec	1 sec	1 sec

3.28.3
No-Movement (Mandown Profiles)

The **No-Movement** section of the Mandown Profiles set contains the following fields:

3.28.3.1
No-Movement Pre-Alarm Duration (sec)

Sets the duration to wait before triggering the Radio Mandown feature.

Range:

Maximum	Minimum	Increment
3600 sec	1 sec	1 sec

3.28.3.2
Alarm Duration (sec)

Sets the duration that the Radio Mandown alarm will sound after the No-Movement Pre-Alarm Duration (sec) has expired.

After this duration, the radio enters into the emergency mode.

Range:

Maximum	Minimum	Increment
3600 sec	1 sec	1 sec

3.28.4
Movement (Mandown Profiles)

The **Movement** section of the Mandown Profiles set contains the following fields:

3.28.4.1
Alert Tone

If enabled, alert tone will be sounded for the Movement alarm following the value as set in Alert Repeat Period (sec).

If disabled, the radio will ignore the Alert Repeat Period setting.

3.28.4.2
Pre-Alarm Duration (sec)

Sets the duration to wait before triggering the Radio Mandown feature.

Range:

Maximum	Minimum	Increment
3600 sec	1 sec	1 sec

3.28.4.3
Alarm Duration (sec)

Sets the duration that the Radio Mandown alert tone will sound after the Pre-Alarm Duration (sec) has expired.

After this duration, the radio enters into the emergency mode.

Range:

Maximum	Minimum	Increment
3600 sec	1 sec	1 sec

3.29
Signaling Systems Set

The **Signaling Systems** set contains features for configuring the analog MDC system or digital emergency system. Once configured, these systems can then be assigned to a channel.

The following sections contain all the supported fields:

3.29.1
General (Signaling Systems)

The **General** section of the Signaling Systems set contains the following fields:

3.29.1.1
Emergency On/Off Switch

Allows the user to enable or disable the radio power on/off switch during an emergency operation.

If disabled, the radio power on/off switch is non-operational during the emergency operation. If the switch is non-operational, then the radio battery needs to be physically removed from the radio.

3.29.2
Digital (Signaling Systems)

The **Digital** section of the Signaling Systems set contains the following fields:

3.29.2.1
Radio Disable Decode

Allows the radio to receive and process a Radio Disable command sent from another radio to remotely disable it.

This feature helps to block usage of stolen or lost radios. This is a radio-wide feature.

NOTICE:
Encode feature is available for Display models in Digital mode only.

Decode feature is available for Display and Non-Display models in both Analog and Digital modes only.

3.29.2.2
Authenticated Radio Inhibit/Uninhibit

This field allows the user to enable or disable the **Authenticated Radio Inhibit/Uninhibit** feature. The valid choices are "Disabled", "Device Authentication" and "User Authentication".

- This feature is hidden when the **Authenticated Radio Disable** feature is disabled.
- This feature is greyed out when the **Radio Disable Decode** check box is checked.

NOTICE: Authenticated Radio Inhibit/Uninhibit is not supported for Capacity Plus and Linked Capacity Plus.

3.29.2.3

Authenticated Passphrase

This field allows the user to choose the passphrase to use for the **Authenticated Radio Inhibit/ Uninhibit** or the **Authenticated Remote Monitor** feature.

NOTICE:

- The characters that are typed into this field are not visible to the user.
- This feature is hidden when the **Authenticated Radio Disable Decode** feature is disabled.
- This feature is greyed out when the **Radio Disable Decode** check box is checked.
- This feature is greyed out when the **Authenticated Radio Inhibit/Uninhibit** or the **Authenticated Remote Monitor** feature is set to a value other than **User Authentication**.
- If the user enters a value that is less than six characters and leaves this field, the value will change to the default value.

3.29.2.4

Authenticated Remote Monitor

This field allows the user to select whether or not to allow Remote Monitor to be authenticated against unauthorized monitoring, similar to the Authenticated Radio Inhibit/Uninhibit feature.

Authenticated Radio Monitor permits supervisory radio users to send an authenticated (but not encrypted) radio remote monitor command to a radio. In response to receiving a remote monitor request, a target radio sends an Authentication Challenge message to the initiating supervisory radio. The Authentication Challenge Response calculation is sent to the target radio for verification.

The following table lists the options for this feature.

Table 50: Options

Selections	Functionality
Disabled	This feature is disabled.
Device Authentication	The Authenticated Remote Monitor is not initiated by either the KMF or Console. Only initiated by a “supervisory” radio.
User Authentication	An Authentication Passphrase is provisioned into every radio that may need to be remotely monitored. The initiating-radio user supplies an Authentication Passphrase which is incorporated into an Authentication Challenge Response calculation. Authenticated Passphrase is enabled.

3.29.2.5

Remote Monitor Decode

Allows the radio to receive and process Remote Monitor command sent from another radio.

This command instructs the receiving radio to activate its microphone and transmitter for the duration specified in Remote Monitor Duration. A call is silently set up on this radio and its transmission controlled remotely without any indication given to the receiving radio user. This is a radio-wide feature.

NOTICE:
Encode feature is available for Display models.

Decode feature is available for Display and Non-Display models.

This feature is supported in Digital mode only.

3.29.2.6

Emergency Remote Monitor Decode

After an emergency alarm is initiated, this feature allows the radio to receive and process Remote Monitor commands sent from another radio for the duration specified in Remote Monitor Duration.

This is an exceptional case of Remote Monitor Decode whereby the radio is able to decode Remote Monitor command even if the Remote Monitor Decode feature is disabled but only for the duration as specified in Remote Monitor Duration. This is a radio-wide feature.

NOTICE:
This feature is supported in Digital mode only.

3.29.2.7

Cancel Emergency

Cancel Emergency feature allows the user to configure whether or not a notification is sent to other radios and system when Emergency is cancelled.

With Notification
Radio sends Cancel Emergency notification to console or other radios in the system.

Without Notification
Radio exits Cancel Emergency without sending notification to console or other radios in the system.

.

NOTICE:
This feature is supported in when Capacity Max feature is enabled.

This feature applies to radio with Emergency System Mode set to **Emergency Alarm and Call** or **Emergency Alarm with Voice to Follow**.

3.29.2.8

Remote Monitor Duration (sec)

Sets the duration that the target radio can be remotely monitored.

This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
120 sec	10 sec	10 sec

NOTICE:
This feature is supported in Digital mode only.

3.29.2.9

TX Sync Wakeup TOT (ms)

This feature adjusts the value of the timer that begins immediately after a message is sent to wake up the repeater.

The timer is stopped when the radio receives a repeater sync signal. If the timer expires before receiving a repeater sync signal, the radio sends another message to wake up the repeater. The number of messages is determined by the TX Wakeup Message Limit, after which the repeater is assumed to be out of range. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
375	125	25

NOTICE:
This feature is supported in Digital mode only.

3.29.2.10
Tx Wakeup Message Limit

This feature sets the number of messages sent to wake up the repeater.

Setting a higher number improves the success rate of waking up the repeater. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
4	1	1

NOTICE:
This feature is supported in Digital mode only.

3.29.3
Analog (Signaling Systems)

The **Analog** section of the Signaling Systems set contains the following fields:

3.29.3.1
Call Alert Encode

This feature enables the radio to be programmed to perform a Call Alert using the configured signaling system.

This is a radio-wide feature.

NOTICE:
This feature is supported in Analog mode only.

3.29.3.2
Sel Call Encode

This feature enables the radio to initiate a Selective Call.

The Selective Call reduces the number of calls not of interest from being heard. Typically, the Selective Call is used when the majority of transmissions are between a dispatcher with either a single radio or a group of radio users, where other users would not be interested in the call. This is a radio-wide feature.

NOTICE:
The Sel Call Hang Time (ms) and Sel Call Tone features are disabled when this feature is disabled (unchecked).

This feature is supported in Analog mode only.

3.29.3.3
Sel Call Tone

Defines when the Radio ID, in association with the Push-to-Talk (PTT) button press, is sent.

Always
Radio will repeatedly transmits the Radio ID during a Selective Call.

Pre
Radio transmits the Radio ID at the start of every Selective Call.

NOTICE:
This feature is disabled when the Sel Call Encode feature is disabled (unchecked).

This feature is set to Always when the Sel Call Hang Time (ms) feature is set to 0 ms.

This feature is supported in Analog mode only.

3.29.3.4 Sel Call Tone/ID

Defines when the Radio ID, in association with the Push-to-Talk (PTT) button press, is sent.

Always
Radio will repeatedly transmits the Radio ID during a Selective Call.

Pre
Radio transmits the Radio ID at the start of every Selective Call.

NOTICE:
This feature is disabled when the Sel Call Encode feature is disabled (unchecked).

This feature is set to Always when the Sel Call Hang Time (ms) feature is set to 0 ms.

This feature is supported in Analog mode only.

3.29.3.5 Sel Call Hang Time (ms)

This sets the duration that the radio reserves the channel after a Push-to-Talk (PTT) button is released for a Selective Call.

During this time, only the individuals involved in the Selective Call that the channel is reserved for can transmit. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
7000 ms	0 ms	500 ms

NOTICE:
This feature is disabled when the Sel Call Encode feature is disabled (unchecked).

This feature is supported in Analog mode only.

3.29.3.6 Auto Reset Timer (sec)

Sets the duration that the radio waits before the radio requires the Signaling Squelch Unmuting Rules to be met again in order to unmute to a call.

Range:

Maximum	Minimum	Increment
255 sec	1 sec	1 sec

NOTICE:
This feature is supported in Analog mode only.

3.29.3.7

5 Tone Call Answer Timer (sec)

Specifies the duration that the radio waits for the call to be answered.

If the timer expires without radio user operation, the incoming radio address will be stored in the missed call list.

Range:

Maximum	Minimum	Increment
255 sec	1 sec	1 sec

NOTICE:
This feature is supported in Analog mode only.

3.29.3.8

5 Tone Authorization Request Monitor Time (sec)

Specifies the duration that the radio waits after sending an authorization request.

An authorization request is initiated from a radio with receive only capabilities to request the controller for permission to transmit on a channel. The request is initiated by pressing the 5 Tone Authorization Request Button Function that is configured with this option telegram. If the correct telegram is received, the channel transmit capabilities are enabled. The default value is 0.

Range:

Maximum	Minimum	Increment
32 sec	0 sec	1 sec

NOTICE:
If the value is set to 0, the squelch rule will not be changed after the authorization sending.

This feature is supported in Analog mode only.

3.29.3.9

5 Tone Authorization Request Button Function

Authorization prevents users from monitoring or talking on the channel until the radio is authorized by the infrastructure.

To enable users to request authorization, the radio must be programmed to send an authorization request telegram using the designated authorization request call button. For Display model, the choices are 5 Tone Call 1, 5 Tone Call 2, 5 Tone Call 3, 5 Tone Call 4, 5 Tone Call 5, 5 Tone Call 6, PTT, and Address Send. For Non-Display model, the choices are 5 Tone Call 1, 5 Tone Call 2, 5 Tone Call 3, 5 Tone Call 4, 5 Tone Call 5, 5 Tone Call 6, and PTT.

NOTICE:
This feature is supported in Analog mode only.

3.29.3.10

5 Tone Emergency Alarm Type

An alarm is a non-voice signal that triggers an alert indication to another radio.

This feature specifies the behavior of the radio's alarm when the emergency button is pressed for 5 Tone channels.

Disabled
The radio is unable to transmit an alarm signal.

Regular
The radio transmits an alarm signal and provides audio and visual indication that it is in Emergency mode.

Silent
The radio transmits an alarm signal but gives no audio or visual indication that it is in Emergency mode. In addition, it will not unmute to any received audio.

Silent w/ Voice
The radio transmits an alarm signal but gives no audio or visual indication that it is in Emergency mode. The radio then unmutes to qualified channel activity.

NOTICE:
This feature is supported in Analog mode only.

3.29.3.11

5 Tone Emergency Revert Channel Zone

This is the channel zone used for 5 Tone emergency alarm or voice.

Any 5 Tone channel, except if the channel is set as RX Only, may be set as the revert channel, including the channel indicated by the radio's channel selector.

NOTICE:
The 5 Tone Emergency Alarm Type feature must not be set to Disabled.

This feature is supported in Analog mode only.

3.29.3.12

5 Tone Emergency Revert Channel

This is the channel used for 5 Tone emergency alarm or voice.

Any 5 Tone channel, except if the channel is set as RX Only, may be set as the revert channel, including the channel indicated by the radio's channel selector.

NOTICE:
The 5 Tone Emergency Alarm Type feature must not be set to Disabled.

This feature is supported in Analog mode only.

3.29.3.13

5 Tone Emergency Cycles

Defines and displays the number of times the radio cycles between transmitting and receiving before going permanently into the receiving mode.

Range:

Maximum	Minimum	Increment
255	1	1

NOTICE:
The 5 Tone Emergency Alarm Type feature must not be set to Disabled.

This feature is disabled if set to 0.

This feature is supported in Analog mode only.

3.29.3.14

5 Tone Emergency TX Tone

Allows the user to enable or disable the 5 Tone Emergency TX Tone.

When enabled, a low-level pulsating tone is transmitted whenever the radio transmits while in the Emergency mode. This 2800 Hz tone is on for 100 ms, off for 200 ms and is 10 dB below nominal 5 Tone deviation. This tone is low enough in volume that it would not interfere with any other audio received while serving to let other users on the channel know that an emergency is in progress and refrain from transmitting on the channel until the emergency is canceled.

NOTICE:
The 5 Tone Emergency Alarm Type feature must not be set to Disabled.

This feature is supported in Analog mode only.

3.29.3.15

5 Tone Emergency TX Cycle Time (sec)

Specifies the duration that the radio remains in the transmit mode within one emergency cycle.

Range:

Maximum	Minimum	Increment
255 sec	1 sec	1 sec

NOTICE:
The 5 Tone Emergency Alarm Type feature must not be set to Disabled.

This feature is disabled if the 5 Tone Emergency Cycles feature is set to 0.

This feature is supported in Analog mode only.

3.29.3.16

5 Tone Emergency RX Cycle Time (sec)

Specifies the duration that the radio remains in the receive mode within one emergency cycle.

Range:

Maximum	Minimum	Increment
255 sec	1 sec	1 sec

NOTICE:
The 5 Tone Emergency Alarm Type feature must not be set to Disabled.

This feature is disabled if the 5 Tone Emergency Cycles feature is set to 0.

This feature is supported in Analog mode only.

3.29.3.17

5 Tone Emergency Encoder Telegram

Specifies a telegram to be automatically encoded/sent when the radio transmits in an Emergency mode.

The choices are None and all available 5 Tone Telegrams.

NOTICE:
The 5 Tone Emergency Alarm Type feature must not be set to Disabled.

This feature is supported in Analog mode only.

3.29.3.18

Position (MDC Status List)

Displays the index of a MDC Status List. This value corresponds to the Status/Message Index.

NOTICE:
This feature is supported in Analog mode only.

3.29.3.19

MDC Status List Name

Configures the name for each MDC status list.

NOTICE:
This feature is supported in Analog mode only.

3.29.3.20

MDC Status List MDC System

Allows the user to select one MDC system per MDC status list.

NOTICE:
This feature is supported in Analog mode only.

3.29.3.21

MDC Status List Revert Channel Zone

Allows the user to select one revert channel zone per MDC status list.

The available choices are **Selected** and all available analog channels.

NOTICE:
The RX Only feature must be disabled.

This feature is supported in Analog mode only.

3.29.3.22

MDC Status List Revert Channel

Allows the user to select one revert channel per MDC status list.

The available choices are Selected and all available analog channels.

NOTICE:
The RX Only feature must be disabled.

This feature is supported in Analog mode only.

3.29.3.23

MDC Status List Strip TPL/DPL

Allows the user to enable/disable strip PL per MDC status list.

NOTICE:
This feature is supported in Analog mode only.

3.29.3.24

Position (MDC Message List)

Displays the index of a MDC Message List. This value corresponds to the Status/Message Index.

NOTICE:
This feature is supported in Analog mode only.

3.29.3.25

MDC Message List Name (MDC Message List)

Configures the name for each MDC message list.

NOTICE:
This feature is supported in Analog mode only.

3.29.3.26

MDC Message List MDC System (MDC Message List)

Allows the user to select one MDC system per MDC message list.

NOTICE:
This feature is supported in Analog mode only.

3.29.3.27

MDC Message List Revert Channel Zone (MDC Message List)

Allows the user to select one revert channel zone per MDC message list.

The available choices are **None** and all available analog channels.

NOTICE:
The RX Only feature must be disabled.

This feature is supported in Analog mode only.

3.29.3.28

MDC Message List Revert Channel (MDC Message List)

Allows the user to select one revert channel per MDC message list.

The available choices are **Selected** and all available analog channels.

NOTICE:
The RX Only feature must be disabled.

This feature is supported in Analog mode only.

3.29.3.29
MDC Message List Strip TPL/DPL (MDC Message List)

This check box allows the user to enable/disable strip PL per MDC message list.

NOTICE:
This feature is supported in Analog mode only.

3.30
User Defined 5 Tone Set

The **User Defined 5 Tone** set is used to set encoder and decoder tone duration times in milliseconds, as well as set tone frequencies.

The following section contains all the supported fields:

3.30.1
General (User Defined 5 Tone)

The **General** section of the User Defined 5 Tone set contains the following fields:

3.30.1.1
Encoder Tone Duration (ms)

Specifies the duration to encode a user-defined 5 Tone signaling standard. The default value is 70 ms.

Range:

Maximum	Minimum	Increment
6000 ms	40 ms	10 ms

NOTICE:
This feature is supported in Analog mode only.

3.30.1.2
Decoder Minimum Tone Duration (ms)

Specifies the minimum duration to decode a user-defined 5 Tone signaling standard. The default value is 40 ms.

Range:

Maximum	Minimum	Increment
6000 ms	10 ms	10 ms

NOTICE:
The value of this feature must not be greater than Decoder Maximum Tone Duration (ms).

This feature is supported in Analog mode only.

3.30.1.3
Decoder Maximum Tone Duration (ms)

Specifies the maximum duration to decode a user-defined 5 Tone signaling standard. The default value is 100 ms.

Range:

Maximum	Minimum	Increment
6000 ms	40 ms	10 ms

NOTICE:
The value of this feature must always be greater or equal to the value of Decoder Minimum Tone Duration (ms).

This feature is supported in Analog mode only.

3.30.1.4

Tone 0 Freq (Hz)

Specifies the frequency to encode the specified tone for the user-defined 5 Tone signaling standard.

The default frequency is the same with the predefined signaling standard ZVEI1.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of the user-defined tones are too close to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap of these tones is the “must-reject” bandwidth of the user-defined signaling standard. Refer to 5 Tone User-Defined Signaling Standards.

This feature is supported in Analog mode only.

3.30.1.5

Tone 1 Freq (Hz)

Specifies the frequency to encode the specified tone for the user-defined 5 Tone signaling standard.

The default frequency is the same with the predefined signaling standard ZVEI1.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of the user-defined tones are too close to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap of these tones is the “must-reject” bandwidth of the user-defined signaling standard. Refer to 5 Tone User-Defined Signaling Standards.

This feature is supported in Analog mode only.

3.30.1.6

Tone 2 Freq (Hz)

Specifies the frequency to encode the specified tone for the user-defined 5 Tone signaling standard.

The default frequency is the same with the predefined signaling standard ZVEI1.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of the user-defined tones are too close to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap of these tones is the “must-reject” bandwidth of the user-defined signaling standard. Refer to 5 Tone User-Defined Signaling Standards.

This feature is supported in Analog mode only.

3.30.1.7

Tone 3 Freq (Hz)

Specifies the frequency to encode the specified tone for the user-defined 5 Tone signaling standard.

The default frequency is the same with the predefined signaling standard ZVEI1.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of the user-defined tones are too close to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap of these tones is the “must-reject” bandwidth of the user-defined signaling standard. Refer to 5 Tone User-Defined Signaling Standards.

This feature is supported in Analog mode only.

3.30.1.8

Tone 4 Freq (Hz)

Specifies the frequency to encode the specified tone for the user-defined 5 Tone signaling standard.

The default frequency is the same with the predefined signaling standard ZVEI1.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of the user-defined tones are too close to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap of these tones is the “must-reject” bandwidth of the user-defined signaling standard. Refer to 5 Tone User-Defined Signaling Standards.

This feature is supported in Analog mode only.

3.30.1.9

Tone 5 Freq (Hz)

Specifies the frequency to encode the specified tone for the user-defined 5 Tone signaling standard.

The default frequency is the same with the predefined signaling standard ZVEI1.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of the user-defined tones are too close to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap of these tones is the “must-reject” bandwidth of the user-defined signaling standard. Refer to 5 Tone User-Defined Signaling Standards.

This feature is supported in Analog mode only.

3.30.1.10

Tone 6 Freq (Hz)

Specifies the frequency to encode the specified tone for the user-defined 5 Tone signaling standard.

The default frequency is the same with the predefined signaling standard ZVEI1.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of the user-defined tones are too close to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap of these tones is the “must-reject” bandwidth of the user-defined signaling standard. Refer to 5 Tone User-Defined Signaling Standards.

This feature is supported in Analog mode only.

3.30.1.11

Tone 7 Freq (Hz)

Specifies the frequency to encode the specified tone for the user-defined 5 Tone signaling standard.

The default frequency is the same with the predefined signaling standard ZVEI1.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of the user-defined tones are too close to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap of these tones is the “must-reject” bandwidth of the user-defined signaling standard. Refer to 5 Tone User-Defined Signaling Standards.

This feature is supported in Analog mode only.

3.30.1.12

Tone 8 Freq (Hz)

Specifies the frequency to encode the specified tone for the user-defined 5 Tone signaling standard.

The default frequency is the same with the predefined signaling standard ZVEI1.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of the user-defined tones are too close to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap of these tones is the “must-reject” bandwidth of the user-defined signaling standard. Refer to 5 Tone User-Defined Signaling Standards.

This feature is supported in Analog mode only.

3.30.1.13

Tone 9 Freq (Hz)

Specifies the frequency to encode the specified tone for the user-defined 5 Tone signaling standard.

The default frequency is the same with the predefined signaling standard ZVEI1.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of the user-defined tones are too close to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap of these tones is the “must-reject” bandwidth of the user-defined signaling standard. Refer to 5 Tone User-Defined Signaling Standards.

This feature is supported in Analog mode only.

3.30.1.14

Tone A Freq (Hz)

Specifies the frequency to encode the specified tone for the user-defined 5 Tone signaling standard.

The default frequency is the same with the predefined signaling standard ZVEI1.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of the user-defined tones are too close to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap of these tones is the “must-reject” bandwidth of the user-defined signaling standard. Refer to 5 Tone User-Defined Signaling Standards.

This feature is supported in Analog mode only.

3.30.1.15

Tone B Freq (Hz)

Specifies the frequency to encode the specified tone for the user-defined 5 Tone signaling standard.

The default frequency is the same with the predefined signaling standard ZVEI1.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of the user-defined tones are too close to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap of these tones is the “must-reject” bandwidth of the user-defined signaling standard. Refer to 5 Tone User-Defined Signaling Standards.

This feature is supported in Analog mode only.

3.30.1.16

Tone C Freq (Hz)

Specifies the frequency to encode the specified tone for the user-defined 5 Tone signaling standard.

The default frequency is the same with the predefined signaling standard ZVEI1.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of the user-defined tones are too close to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap of these tones is the “must-reject” bandwidth of the user-defined signaling standard. Refer to 5 Tone User-Defined Signaling Standards.

This feature is supported in Analog mode only.

3.30.1.17

Tone D Freq (Hz)

Specifies the frequency to encode the specified tone for the user-defined 5 Tone signaling standard.

The default frequency is the same with the predefined signaling standard ZVEI1.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of the user-defined tones are too close to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap of these tones is the “must-reject” bandwidth of the user-defined signaling standard. Refer to 5 Tone User-Defined Signaling Standards.

This feature is supported in Analog mode only.

3.30.1.18

Tone E Freq (Hz)

Specifies the frequency to encode the specified tone for the user-defined 5 Tone signaling standard.

The default frequency is the same with the predefined signaling standard ZVEI1.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of the user-defined tones are too close to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap of these tones is the “must-reject” bandwidth of the user-defined signaling standard. Refer to 5 Tone User-Defined Signaling Standards.

This feature is supported in Analog mode only.

3.30.1.19
Tone F Freq (Hz)

Specifies the frequency to encode the specified tone for the user-defined 5 Tone signaling standard.

The default frequency is the same with the predefined signaling standard ZVEI1.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of the user-defined tones are too close to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap of these tones is the “must-reject” bandwidth of the user-defined signaling standard. Refer to 5 Tone User-Defined Signaling Standards.

This feature is supported in Analog mode only.

3.31
5 Tone Systems Set

The **5 Tone Systems** set is used to configure up to a maximum of eight 5 Tone Systems. In a 5 Tone Signaling Systems, each radio has a unique numeric identity (e.g., 12345). To signal the number 12345, a sequence of 5 tones is sent. Sequences of audible tones, of short duration, are sent between radios. Most 5 tone sequences take less than half a second to send.

The following sections contain all the supported fields:

3.31.1
General (5 Tone Systems)

The **General** section of the 5 Tone Systems set contains the following fields:

3.31.1.1
System Name (5 Tone System)

Displays the name of the system.

NOTICE:
This feature is supported in Analog mode only.

3.31.1.2
Signaling System

The radio supports the following predefined 5 Tone signaling standards: ZVEI1, ZVEI2, ZVEI3, CCIR 20ms, CCIR 70ms, CCIR 100ms and EEA.

The radio also supports two user-defined signaling standards: User Defined 1 and User Defined 2. The user-defined signaling standards can be configured under Signaling Systems->User Defined 5 Tone. The default selection is ZVEI1. A 5 Tone signaling standard defines 16 tones, namely 0-9 and A-F (refer to 5 Tone Predefined Signaling Standards for the specification of the predefined standard and 5 Tone User-Defined Signaling Standards for the specification of the user-defined standard) as well as two single tones, namely Single Tone 1 and Single Tone 2. The frequency and duration of the single tones are specified by the user under 5 Tone->Encoder Single Tone and 5 Tone->Decoder Single Tone.

NOTICE:
This feature is supported in Analog mode only.

3.31.1.3
Group Tone

Specifies a Group Tone from the choices of 0-9 or A-F for a particular 5 Tone Signaling System. The default value is A.

NOTICE:
This feature resets to the original value if the user tries to set it to the same value as the Repeat Tone feature.

This feature is supported in Analog mode only.

3.31.1.4
Repeat Tone

Specifies a Repeat Tone from the choices of 0-9 or A-F for a particular 5 Tone Signaling System. The default value is E.

NOTICE:
This feature resets to the original value if the user tries to set it to the same value as the Group Tone feature.

This feature is supported in Analog mode only.

3.31.2
Encoder Single Tone (5 Tone Systems)

The **Encoder Single Tone** section of the 5 Tone Systems set contains the following fields:

3.31.2.1
Single Tone 1 Frequency (Hz) (Encoder)

Specifies the frequency to encode Single Tone 1. The default value is 885 Hz.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of a single tone is too close to the tones in the specified signaling standard or to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap is the “must reject” bandwidth of the specified signaling standard.

This feature is supported in Analog mode only.

3.31.2.2 Single Tone 1 Duration (ms)

Specifies the duration to encode Single Tone 1. The default value is 500 ms.

Range:

Maximum	Minimum	Increment
6000 ms	40 ms	10 ms

NOTICE:
This feature is supported in Analog mode only.

3.31.2.3 Single Tone 2 Frequency (Hz) (Encoder)

Specifies the frequency to encode Single Tone 2. The default value is 885 Hz.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
If the frequency of a single tone is too close to the tones in the specified signaling standard or to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap is the “must reject” bandwidth of the specified signaling standard.

This feature is supported in Analog mode only.

3.31.2.4 Single Tone 2 Duration (ms)

Specifies the duration to encode Single Tone 2. The default value is 500 ms.

Range:

Maximum	Minimum	Increment
6000 ms	40 ms	10 ms

NOTICE:
This feature is supported in Analog mode only.

3.31.3

Decoder Single Tone (5 Tone Systems)

The **Decoder Single Tone** section of the 5 Tone Systems set contains the following fields:

3.31.3.1

Enable Tone 1

Allows the user to enable or disable Single Tone 1 decode.

NOTICE:
This feature is supported in Analog mode only.

3.31.3.2

Single Tone 1 Frequency (Hz) (Decoder)

Specifies the frequency to decode Single Tone 1. The default value is 885 Hz.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
This feature is enabled when the Enable Tone 1 feature is enabled.

If the frequency of a single tone is too close to the tones in the specified signaling standard or to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap is the “must reject” bandwidth of the specified signaling standard.

This feature is supported in Analog mode only.

3.31.3.3

Single Tone 1 Minimum Duration (ms)

Specifies the minimum duration to decode Single Tone 1. The default value is 400 ms.

Range:

Maximum	Minimum	Increment
6000 ms	10 ms	10 ms

NOTICE:
This feature is enabled when the Enable Tone 1 feature is enabled.

The value of this feature must not be greater than Single Tone 1 Maximum Duration (ms).

This feature is supported in Analog mode only.

3.31.3.4

Single Tone 1 Maximum Duration (ms)

Specifies the maximum duration to decode Single Tone 1. The default value is 600 ms.

Range:

Maximum	Minimum	Increment
6000 ms	40 ms	10 ms

NOTICE:
This feature is enabled when the Enable Tone 1 feature is enabled.

The value of this feature must always be greater or equal to the value of Single Tone 1 Minimum Duration (ms).

This feature is supported in Analog mode only.

3.31.3.5 Enable Tone 2

Allows the user to enable or disable Single Tone 2 decode.

NOTICE:
This feature is supported in Analog mode only.

3.31.3.6 Single Tone 2 Frequency (Hz) (Decoder)

Specifies the frequency to decode Single Tone 2. The default value is 885 Hz.

Range:

Maximum	Minimum	Increment
3000 Hz	300 Hz	1 Hz

NOTICE:
This feature is enabled when the Enable Tone 2 feature is enabled.

If the frequency of a single tone is too close to the tones in the specified signaling standard or to each other, the receiving radio may not be able to differentiate them. The suggested minimal frequency gap is the “must reject” bandwidth of the specified signaling standard.

This feature is supported in Analog mode only.

3.31.3.7 Single Tone 2 Minimum Duration (ms)

Specifies the minimum duration to decode Single Tone 2. The default value is 400 ms.

Range:

Maximum	Minimum	Increment
6000 ms	10 ms	10 ms

NOTICE:
This feature is enabled when the Enable Tone 2 feature is enabled.

The value of this feature must not be greater than Single Tone 2 Maximum Duration (ms).

This feature is supported in Analog mode only.

3.31.3.8 Single Tone 2 Maximum Duration (ms)

Specifies the maximum duration to decode Single Tone 2. The default value is 600 ms.

Range:

Maximum	Minimum	Increment
6000 ms	40 ms	10 ms

NOTICE:
This feature is enabled when the Enable Tone 2 feature is enabled.

The value of this feature must always be greater or equal to the value of Single Tone 2 Minimum Duration (ms).

This feature is supported in Analog mode only.

3.32
MDC Systems Set

The Motorola Data Communication (MDC) is a Motorola proprietary signaling system protocol used by the radio to communicate data in Analog Mode. The **MDC Systems** set is used to configure the MDC protocol.

A maximum of 32 MDC systems can be created.

3.32.1
General (MDC Systems)

This section explains the **General** settings of the MDC Systems.

3.32.1.1
System Name (MDC System)

This displays the name of the system.

3.32.1.2
Primary ID (Hex)

This is the ID used to identify MDC messages transmitted to a radio.

It is sent out to the target radio during Call Alert or emergency. You can enter a maximum of four hexadecimal digits in the text box.

Range:

Table 51: Primary ID (Hex) Range

Maximum	Minimum	Increment
DEEE	0001	1 (Hex)

NOTICE:
The character F (Hex) is not allowed for any of the digits.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.32.1.3
PTT ID Type

Defines when the radio's ID (Primary ID), in association with the Push-to-Talk (PTT) button press, will be sent.

None
When the user presses the PTT, no Primary ID is sent.

Pre Only
When the user presses the PTT, the radio transmits the Primary ID at the start of every voice transmission.

Post Only
After the voice transmission is over, the radio keeps the channel keyed and transmits the Primary ID.

Pre and Post
The Primary ID is transmitted once at the beginning of the voice transmission and again after the voice transmission.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.32.1.4
PTT Sidetone

Selects the type of tone played from the time the Push-to-Talk (PTT) button is pressed until the time the MDC Signaling System data packet is transmitted.

The purpose of this tone is to let the user know when voice may be initiated.

Long
Causes the radio to sound a continuous alert tone for the duration the Signaling System data packet is transmitted.

None
No tone is transmitted when the PTT button is pressed.

Short
Causes the radio to sound a short alert tone immediately after the Signaling System data packet is transmitted.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

Disabling this feature does not disable other tones, i.e. Talk Permit will still be heard by the user.

3.32.1.5
Group ID (Hex)

This is the ID used to identify MDC messages transmitted to a group of radios.

It is sent out to the target group during Call Alert. A user may enter up to a maximum of 3 hexadecimal digits in the text box.

Range:

Maximum	Minimum	Increment
EEE	000	1 (Hex)

NOTICE:
The character F(Hex) is not allowed for any of the digits.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.32.1.6

Pretime (ms) (MDC System)

Sets the duration that the radio waits, after a Push-to-Talk (PTT) button press, before it starts transmitting the MDC signaling system data packet (e.g. preamble bit sync) and data.

When communicating via a repeater system or console, this feature allows the repeater to stabilize before the radio starts transmitting the data. Additionally, this timer gives scanning radios time to land on the channel prior to the reception of MDC data.

Range:

Maximum	Minimum	Increment
4500 ms	0 ms	25 ms

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.32.1.7

Preamble Bit Sync

Selects the number of synchronizing packet sent for the transmitting and receiving radios to synchronize prior to MDC signaling data transmission.

Range:

Maximum	Minimum	Increment
96	0	1

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.32.1.8

Call Alert Type (MDC System)

Selects the type of call that can be received on the current MDC Signaling System.

Call Alert
Allows a transmitting radio to notify another user, requesting that they call back the user (call initiator) when they (recipient) become available. There is no voice communication involved.

Call Alert w/Voice
Combination of Call Alert and Selective Call. This allows the receiving radio to receive voice calls besides Call Alert.

None
Neither of the listed options can be performed on the current system.

3.32.1.9

Radio Check Decode

Allows the user/console operator to determine if a radio is active in a system without showing any indication to the radio's user.

NOTICE:
Encode feature is available for Display models only.

Decode feature is available for both Display and Non-Display models.

3.32.1.10

Sel Call Decode

This feature enables the radio to receive and decode a MDC Selective Call.

The MDC Selective Call reduces the number of calls not of interest from being heard. Typically, the Selective Call is used when the majority of transmissions are between a dispatcher with either a single radio or a group of radio users, where other users would not be interested in the call.

NOTICE:
This feature is supported in Analog mode only.

3.32.1.11

Auto Reset Timer Type (MDC System)

Configures the Auto Reset Timer Type to determine how the Auto Reset Timer (sec) is used during a MDC call.

The radio requires the Signaling Squelch Unmuting Rules to be met before it unmutes to a call and begins the timer. Note that while the timer is running, the radio is in the Release Squelch State.

None
The radio enters the Release Squelch State until the radio is muted. Timer is not used.

Manual
Radio user manually ends the Release Squelch State.

Auto-Reset w/ Carrier Overide
The timer begins on the receiving radio when the radio unmutes to the call and the radio is in Release Squelch State. The timer resets at each Push-to-Talk (PTT) button press and at each time the radio is muted. If the radio is muted when the timer expires, the Signaling Squelch Unmuting Rules must be met again in order to unmute to a call. If the radio is unmuted when the timer expires, the radio remains unmuted for the remainder of the call.

Auto-Reset w/o Carrier Overide
The timer begins on the receiving radio when the radio unmutes to the call and the radio is in Release Squelch State. The timer resets at each Push-to-Talk (PTT) button press. When the timer expires, the radio is muted, the Release Squelch State is ended, and the Signaling Squelch Unmuting Rules must be met again in order to unmute to a call.

3.32.1.12

Remote Monitor Decode (MDC System)

Allows the radio to receive and process Remote Monitor command sent from another radio.

This command instructs the receiving radio to activate its microphone and transmitter for the duration specified in Remote Monitor Duration. A call is silently set up on this radio and its transmission controlled remotely without any indication given to the receiving radio user.

NOTICE:
Encode feature is available for Display models.

Decode feature is available for Display and Non-Display models.

This feature is supported in Analog mode only.

3.32.1.13

Emergency Remote Monitor Decode (MDC System)

After an emergency alarm is initiated, this feature allows the radio to receive and process Remote Monitor commands sent from another radio for the duration specified in Emergency Remote Monitor Duration.

NOTICE:
This feature is disabled if the Remote Monitor Decode feature is enabled.

This feature is supported in Analog mode only.

3.32.1.14

Remote Monitor Duration (sec) (MDC System)

Sets the duration that the target radio can be remotely monitored.

Range:

Maximum	Minimum	Increment
120 sec	10 sec	10 sec

NOTICE:
This feature is supported in Analog mode only.

3.32.1.15

Emergency Remote Monitor Duration (sec) (MDC System)

Sets the duration that the target radio can be remotely monitored during an emergency.

Range:

Maximum	Minimum	Increment
120 sec	10 sec	10 sec

NOTICE:
This feature is supported in Analog mode only.

3.32.1.16

Repeater Access Type

Allows the user to configure the MDC repeater access type from the following choices.

None
The radio does not transmit the MDC Repeater Access ID prior to any other voice or data transmission.

Auto
The radio transmits the MDC Repeater Access ID prior to any other voice or data transmission.

NOTICE:
The Repeater Access Pretime is enabled if this feature is set to Auto.

This feature is supported in Analog mode only.

3.32.1.17
Repeater Access Pretime (ms)

Sets the duration that the radio waits, after a Push-to-Talk (PTT) button press, before it starts transmitting the MDC signaling system data packet (e.g. preamble bit sync) and data.

When communicating via a repeater system or console, this feature allows the repeater to stabilize before the radio starts transmitting the data. Additionally, this timer gives scanning radios time to land on the channel prior to the reception of MDC data. This pretime is used while transmitting the MDC Repeater Access ID, instead of the general MDC Pretime.

Range:

Maximum	Minimum	Increment
4500 ms	0 ms	25 ms

NOTICE:
This feature is enabled if Repeater Access Type is set to Auto.

This feature is supported in Analog mode only.

3.32.2
DOS (MDC Systems)

This section explains the **DOS** settings of the MDC Systems.

3.32.2.1
Criteria Type

Selects the frequency type used to determine Data Operated Squelch (DOS) activation.

The choices are 1200 Hz or 1800 Hz or 1200 Hz and 1800 Hz.

NOTICE:
The option 1200Hz or 1800Hz is required for backward compatibility with earlier radios, and is therefore rarely used. The 1200 Hz and 1800 Hz is the commonly used value.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.32.2.2
Coast Duration (ms)

If the carrier signal is lost after MDC signaling data is detected, the radio stays muted for the duration of this timer or until the carrier signal is redetected.

Once the carrier signal is redetected, this timer is stopped, and the Data Operated Squelch (DOS) Auto Mute Duration timer begins again. This feature helps to prevent temporary loss of DOS in areas of poor signal strength or signal distortions.

Range:

Maximum	Minimum	Increment
500 ms	0 ms	25 ms

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.32.2.3

Auto Mute Duration (ms)

Sets the duration that the radio remains muted when the radio is receiving MDC signaling data to reduce noise from the data reception.

The user has to know the size of the data to select a suitable duration. If the duration is too short then some unwanted noise will still be heard, and if the duration is too long, it might clip some voice audio. This is normally used on radios that support both voice and data on the same channel.

Range:

Maximum	Minimum	Increment
4500 ms	0 ms	25 ms

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.32.2.4

Fixed Retry Wait Time (sec)

Sets the duration that the radio waits before attempting another polite or impolite transmission to transmit signaling data.

Configuring the radios with different wait durations increases the probability of accessing the system and reduces the chances of data lost due to collisions.

Range:

Maximum	Minimum	Increment
17 sec	0 sec	0.1 sec

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.32.3

Emergency (MDC Systems)

This section explains the **Emergency** settings of the MDC Systems.

3.32.3.1

Alarm Type (MDC Emergency System)

An alarm is a non-voice signal that triggers an alert indication to another radio.

This feature specifies the behavior of the initiating radio's alarm when the emergency button is pressed.

Disabled
The radio is unable to transmit an alarm signal.

Regular
The radio transmits an alarm signal and provides audio and visual indication that it is in Emergency mode.

Silent
The radio transmits an alarm signal but gives no audio or visual indication that it is in Emergency mode. In addition, it will not unmute to any received audio.

Silent w/ Voice

The radio transmits an alarm signal but gives no audio or visual indication that it is in Emergency mode. The radio then unmutes to qualified channel activity.

NOTICE:
At least one analog channel must have its TX Signaling System feature set to the current MDC System in order for this feature to be enabled.

To send an MDC Emergency in TalkAround mode, the analog channel must have its RX Signaling System feature set to an MDC System.

The Mode, Revert Channel, Impolite Retries and Polite Retries features are disabled if this feature is set to Disabled.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.32.3.2 Mode (MDC Emergency System)

Defines the radio's behavior when the radio's emergency button is pressed.

Emergency Alarm

The radio sends an emergency alarm and exits the emergency mode. This alarm is a non-voice signal that triggers an alert indication on another radio.

Emergency Alarm w/ Call

An emergency alarm is sent, after which an emergency call can be transmitted by pressing the Push-To-Talk (PTT) button.

Emergency Alarm w/ Voice to Follow

This option enables the Hot Mic feature, allowing for the programming of the Hot Mic related features, i.e. Hot Mic Duration. An emergency alarm is sent and the microphone is activated for an emergency call. Voice is transmitted without the need to press the Push-To-Talk (PTT) button.

NOTICE:
The Alarm Type feature must not be set to Disabled.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.32.3.3 Revert Channel Zone (MDC Emergency System)

This is the channel zone used for MDC emergency alarm or voice.

Any analog channel may be set as the Revert Channel, including the channel indicated by the radio's channel selector.

NOTICE:
The Alarm Type feature must not be set to Disabled.

The Selected option is a valid choice when every analog channel has its TX Signaling System feature set to an MDC System.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.32.3.4 Revert Channel (MDC Emergency System)

This is the channel used for MDC emergency alarm or voice.

Any analog channel may be set as the Revert Channel, including the channel indicated by the radio's channel selector.

NOTICE:
The Alarm Type feature must not be set to Disabled.

The Selected option is a valid choice when every analog channel has its TX Signaling System feature set to an MDC System.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.32.3.5
Sticky Revert

Causes the radio to remain permanently on the emergency revert channel after the emergency transmission has been sent and acknowledged.

The radio must be powered off for it to return to the radio selected channel.

NOTICE:
This feature is disabled if Alarm Type is set to Disabled.

This feature is disabled if Revert Channel is set to None.

This feature is supported in Analog mode only.

3.32.3.6
Sticky Revert Alert

Sounds the emergency sticky revert talk permit tone when the user presses the PTT while the radio is on the emergency sticky revert channel.

If disabled, the talk permit tone is sounded instead.

NOTICE:
This feature is disabled if Alarm Type is set to Disabled or Disable All Tones is enabled.

This feature is enabled if Sticky Revert is enabled.

This feature is supported in Analog mode only.

3.32.3.7
Impolite Retries (MDC Emergency System)

An impolite transmission is a transmission that occurs even when there is activity on the current channel.

The radio tries a number of impolite transmissions to get an acknowledgement and then goes on to try a number of polite transmissions. This feature sets the number of attempts to transmit an emergency alarm impolitely.

Range:

Maximum	Minimum	Increment
15	1	1

NOTICE:
The Alarm Type feature must not be set to Disabled.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.32.3.8

Polite Retries (MDC Emergency System)

A polite transmission is a transmission that occurs only when the current channel is free of activity.

The radio tries a number of impolite transmissions to get an acknowledgement before trying a number of polite transmissions. This feature sets the number of attempts to transmit an emergency alarm politely.

Range:

Maximum	Minimum	Increment
∞	0	1

NOTICE:
The Alarm Type feature must not be set to Disabled.

The radio will attempt to transmit indefinitely if the Infinity option is selected.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.32.3.9

Cycles (MDC Emergency System)

Defines and displays the number of times the radio cycles between transmitting and receiving before going permanently into the receiving mode in the MDC emergency system.

Range:

Maximum	Minimum	Increment
10	1	1

NOTICE:
This feature is disabled if the Mode feature is set to other than Emergency Alarm w/ Voice To Follow.

For Emergency Alarm w/ Voice To Follow, the TX Cycle Time, RX Cycle Time, and Cycles parameters should be set so as not to exceed 50% transmit time.

The Alarm Type feature must not be set to Disabled.

This feature is supported in Analog mode only.

3.32.3.10

TX Cycle Time (sec) (MDC Emergency System)

Specifies the duration that the radio remains in the transmit mode within one cycle in the MDC emergency system.

Range:

Maximum	Minimum	Increment
120 sec	10 sec	10 sec

NOTICE:
This feature is disabled if the Mode feature is set to other than Emergency Alarm w/ Voice To Follow.

For Emergency Alarm w/ Voice To Follow, the TX Cycle Time, RX Cycle Time, and Cycles parameters should be set so as not to exceed 50% transmit time.

The Alarm Type feature must not be set to Disabled.

This feature is disabled if the Cycles feature is set to 0.

This feature is supported in Analog mode only.

3.32.3.11

RX Cycle Time (sec) (MDC Emergency System)

Specifies the duration that the radio remains in the receive mode within one cycle in the MDC emergency system.

Range:

Maximum	Minimum	Increment
120 sec	10 sec	10 sec

NOTICE:
This feature is disabled if the Mode feature is set to other than Emergency Alarm w/ Voice To Follow.

For Emergency Alarm w/ Voice To Follow, the TX Cycle Time, RX Cycle Time, and Cycles parameters should be set so as not to exceed 50% transmit time.

The Alarm Type feature must not be set to Disabled.

This feature is disabled if the Cycles feature is set to 0.

This feature is supported in Analog mode only.

3.32.3.12

PTT Sidetone (MDC Emergency System)

This feature sounds an alert tone from the time the Push-to-Talk (PTT) button is pressed until the time the MDC Signaling System data packet is transmitted during an emergency.

This feature alerts the radio user that the channel is available for him/her to respond producing a smoother flow of conversation. This is a radio-wide feature.

NOTICE:
The Disable All feature must be disabled.

3.33

Quik-Call II Systems Set

The **Quik-Call II Systems** set is used to configure an analog mode signaling type by encoding either a single tone or a sequence of two tones. A maximum of 32 Quik-Call II systems can be created.

The following section contains all supported fields:

3.33.1
General (Quick-Call II Systems)

The **General** section of the Quick-Call II Systems set contains the following fields:

3.33.1.1
System Name (Quik-Call II System)

This displays the name of the system.

NOTICE:
This feature is supported in Analog mode only.

3.33.1.2
Call Type (Quik-Call II System)

Selects the type of call that can be received on the current Quik-Call II Signaling System.

Call Alert
Allows a transmitting radio to notify another user, requesting that they call back the user (call initiator) when they (recipient) become available. There is no voice communication involved.

Call Alert w/Voice
Combination of Call Alert and Selective Call. This allows the receiving radio to receive voice calls besides Call Alert.

None
Neither of the listed options can be performed on the current system.

Sel Call
The Quik-Call II Selective Call reduces the number of calls not of interest from being heard. Typically, the Selective Call is used when the majority of transmissions are between a dispatcher with either a single radio or a group of radio users, where other users would not be interested in the call.

NOTICE:
The Tone A Freq (Hz), Code , Tone B Freq (Hz), Code , Tone C Freq (Hz), Code , Tone D Freq (Hz), and Code features are disabled (grayed out) when this feature is set to None.

This feature is supported in Analog mode only.

3.33.1.3
Call Format

Selects the format the call used for the current Quik-Call II Signaling System.

A-B
Tone generated at frequency A followed by tone generated at frequency B.

A-B/A-C
Tone generated at frequency A followed by tone generated at frequency B. Or, tone generated at frequency A followed by tone generated at frequency C.

A-B/C-B
Tone generated at frequency A followed by tone generated at frequency B. Or, tone generated at frequency C followed by tone generated at frequency B.

A-B/Long B
Tone generated at frequency A followed by tone generated at frequency B. Or, a long tone generated at frequency B.

A-B/Long C
Tone generated at frequency A followed by tone generated at frequency B. Or, a long tone generated at frequency C.

A-B/A-C/Long C
Tone generated at frequency A followed by tone generated at frequency B. Or, tone generated at frequency A followed by tone generated at frequency C. Or, a long tone generated at frequency C.

A-B/Long B/Long C
Tone generated at frequency A followed by tone generated at frequency B. Or, a long tone generated at frequency B. Or, a long tone generated at frequency C.

A-B/A-C/Long B/Long C
Tone generated at frequency A followed by tone generated at frequency B. Or, tone generated at frequency A followed by tone generated at frequency C. Or, a long tone generated at frequency B. Or, a long tone generated at frequency C.

A-B/A-D/C-D
Tone generated at frequency A followed by tone generated at frequency B. Or, tone generated at frequency A followed by tone generated at frequency D. Or, tone generated at frequency C followed by tone generated at frequency D.

A-B/C-D
Tone generated at frequency A followed by tone generated at frequency B. Or, tone generated at frequency C followed by tone generated at frequency D.

NOTICE:
This feature is supported in Analog mode only.

3.33.1.4

Tone A Freq (Hz)

Selects the frequency of Tone A to be transmitted for the Quik-Call II two-tone signaling system.

Selecting a value for this field automatically selects a correlating value for the Code <Tone A> field, and vice versa.

Range:

Maximum	Minimum	Increment
3086.0 Hz	288.5 Hz	0.1 Hz

NOTICE:
This feature is supported in Analog mode only.

3.33.1.5

Tone B Freq (Hz)

Selects the frequency of Tone B to be transmitted for the Quik-Call II two-tone signaling system.

Selecting a value for this field automatically selects a correlating value for the Code field, and vice versa.

Range:

Maximum	Minimum	Increment
3086.0 Hz	288.5 Hz	0.1 Hz

NOTICE:
This feature is supported in Analog mode only.

3.33.1.6

Tone C Freq (Hz)

Selects the frequency of Tone C to be transmitted for the Quik-Call II two-tone signaling system.

Selecting a value for this field automatically selects a correlating value for the Code field, and vice versa.

Range:

Maximum	Minimum	Increment
3086.0 Hz	288.5 Hz	0.1 Hz

NOTICE:
This feature is supported in Analog mode only.

3.33.1.7

Tone D Freq (Hz)

Selects the frequency of Tone D to be transmitted for the Quik-Call II two-tone signaling system.

Selecting a value for this field automatically selects a correlating value for the Code field, and vice versa.

Range:

Maximum	Minimum	Increment
3086.0 Hz	288.5 Hz	0.1 Hz

NOTICE:
This feature is supported in Analog mode only.

3.33.1.8

Tone A Code

Selects the code of Tone A to be transmitted for the Quik-Call II two-tone signaling system.

Selecting a value for this field automatically selects a correlating value for the Tone A Freq (Hz) field, and vice versa.

NOTICE:
This feature is supported in Analog mode only.

3.33.1.9

Tone B Code

Selects the code of Tone B to be transmitted for the Quik-Call II two-tone signaling system.

Selecting a value for this field automatically selects a correlating value for the Tone B Freq (Hz) field, and vice versa.

NOTICE:
This feature is supported in Analog mode only.

3.33.1.10

Tone C Code

Selects the code of Tone C to be transmitted for the Quik-Call II two-tone signaling system.

Selecting a value for this field automatically selects a correlating value for the Tone C Freq (Hz) field, and vice versa.

NOTICE:
This feature is supported in Analog mode only.

3.33.1.11
Tone D Code

Selects the code of Tone D to be transmitted for the Quik-Call II two-tone signaling system.

Selecting a value for this field automatically selects a correlating value for the Tone D Freq (Hz) field, and vice versa.

NOTICE:
This feature is supported in Analog mode only.

3.33.1.12
Auto Reset Timer Type (Quik-Call II System)

Configures the Auto Reset Timer Type to determine how the Auto Reset Timer (sec) is used during a Quik-Call II call.

The radio requires the Signaling Squelch Unmuting Rules to be met before it unmutes to a call and begins the timer. Note that while the timer is running, the radio is in the Release Squelch State.

None
The radio enters the Release Squelch State until the radio is muted. Timer is not used.

Manual
Radio user manually ends the Release Squelch State.

Auto-Reset w/ Carrier Overide
The timer begins on the receiving radio when the radio unmutes to the call and the radio is in Release Squelch State. The timer resets at each Push-to-Talk (PTT) button press and at each time the radio is muted. If the radio is muted when the timer expires, the Signaling Squelch Unmuting Rules must be met again in order to unmute to a call. If the radio is unmuted when the timer expires, the radio remains unmuted for the remainder of the call.

Auto-Reset w/o Carrier Overide
The timer begins on the receiving radio when the radio unmutes to the call and the radio is in Release Squelch State. The timer resets at each Push-to-Talk (PTT) button press. When the timer expires, the radio is muted, the Release Squelch State is ended, and the Signaling Squelch Unmuting Rules must be met again in order to unmute to a call.

NOTICE:
This feature is supported in Analog mode only.

3.33.1.13
Sidetone (Quik-Call II System)

Selects the type of tone played when a Selective Call or Call Alert is triggered.

The purpose of this tone is to let the user know the end of the Quik-Call II data packet transmission.

Long
Causes the radio to sound a continuous alert tone for the duration the Signaling System data packet is transmitted. This is applicable to Selective Call only. No tone will be sounded for Call Alert.

None
No tone is transmitted when a Selective Call or Call Alert is triggered.

Short

Causes the radio to sound a short alert tone immediately after the Signaling System data packet is transmitted.

NOTICE:
This feature is supported in Analog mode only.

3.33.1.14

Pretime (ms) (Quik-Call II)

Sets the duration that the radio waits in milliseconds (ms), after a Push-to-Talk (PTT) button press, before it starts transmitting the Quik-Call II signaling system data packet (e.g. preamble bit sync) and data.

When communicating via a repeater system or console, this feature allows the repeater to stabilize before the radio starts transmitting the data. Additionally, this timer gives scanning radios time to land on the channel prior to the reception of Quik-Call II data.

Range:

Maximum	Minimum	Increment
4500 ms	0 ms	25 ms

NOTICE:
This feature is supported in Analog mode only.

3.33.1.15

Long Tone Duration (sec)

Selects the time amount used when transmitting (encode) a Quik-Call II Long Tone, for the current Quik-Call II Signaling System.

Range:

Maximum	Minimum	Increment
33 sec	3 sec	1 sec

NOTICE:
This feature is supported in Analog mode only.

3.33.1.16

Limited Patience Timer (sec)

Sets the amount of time that the radio politely waits for the traffic on the current channel to clear before impolitely transmitting the Call Alert.

Range:

Maximum	Minimum	Increment
255 sec	1 sec	1 sec

NOTICE:
This feature is supported in Analog mode only.

3.34
Digital Emergency Systems Set

The **Digital Emergency Systems** set is used to configure the signaling protocol used by the radio for communication during an emergency when the radio is in digital mode. A maximum of 32 Digital Emergency systems can be created.

The following section contains all the supported fields:

3.34.1
General (Digital Emergency Systems)

This section explains the **General** settings of the Digital Emergency Systems.

3.34.1.1
System Name (Digital Emergency System)

This displays the name of the system.

NOTICE:
This feature is supported in Digital mode only.

3.34.1.2
Alarm Type (Digital Emergency System)

An alarm is a non-voice signal that triggers an alert indication on another radio.

This feature specifies the behavior of the initiating radio's alarm when the emergency button is pressed.

Disabled
The radio is unable to transmit an alarm signal.

Regular
The radio transmits an alarm signal and provides audio and visual indication that it is in Emergency mode.

Silent
The radio transmits an alarm signal but gives no audio or visual indication that it is in Emergency mode. In addition, it will not unmute to any received audio.

Silent w/ Voice
The radio transmits an alarm signal but gives no audio or visual indication that it is in Emergency mode. The radio then unmutes to qualified channel activity.

NOTICE:
The Mode, Hot Mic Duration, Revert Channel, Impolite Retries, Polite Retries and TX Interrupt features are disabled if this feature is set to Disabled.

This feature is supported in Digital mode only and requires that each radio has a unique radio ID.

3.34.1.3
Mode (Digital Emergency System)

Defines the radio’s behavior when the radio's emergency button is pressed.

Emergency Alarm
The radio sends an emergency alarm and exits the emergency mode. This alarm is a non-voice signal that triggers an alert indication on another radio.

Emergency Alarm w/ Call

An emergency alarm is sent, after which an emergency call can be transmitted by pressing the Push-To-Talk (PTT) button.

Emergency Alarm w/ Voice to Follow

This option enables the Hot Mic feature, allowing for the programming of the Hot Mic related features, i.e. Hot Mic Duration. An emergency alarm is sent and the microphone is activated for an emergency call. Voice is transmitted without the need to press the Push-To-Talk (PTT) button.

NOTICE:
The Alarm Type feature must not be set to Disabled.

This feature is supported in Digital mode only and requires that each radio has a unique radio ID.

3.34.1.4
Revert Channel Zone (Digital Emergency System)

This is the channel zone used for digital emergency alarm or voice.

Any single site digital channel may be set as the Revert Channel, including the channel indicated by the radio's channel selector.

NOTICE:
The Alarm Type feature must not be set to Disabled.

At least one channel must have a Group Call as its Contact Name.

The Selected option is a valid choice when every digital channel has a Group Call as its Contact Name.

This feature is supported in Digital mode only and requires that each radio has a unique radio ID.

3.34.1.5
Revert Channel (Digital Emergency System)

This is the channel used for digital emergency alarm or voice.

Any single site digital channel may be set as the Revert Channel, including the channel indicated by the radio's channel selector.

NOTICE:
The Alarm Type feature must not be set to Disabled.

At least one channel must have a Group Call as its Contact Name.

The Selected option is a valid choice when every digital channel has a Group Call as its Contact Name.

This feature is supported in Digital mode only and requires that each radio has a unique radio ID.

3.34.1.6
Contact (Digital Emergency System)

This field allows the user to browse and select an existing Contact Set from the list of available Contacts Sets.

The options are **None** and all available **Contacts**.

NOTICE:
The Alarm Type feature must not be set to Disabled.

3.34.1.7

Ack Required (Digital Emergency System)

This feature allows the user to disable the Ack (Acknowledgment) Required feature.

When enabled, the radio stops transmitting Emergency Alarms after receiving an Ack from a receiving radio or radios that the Alarm has been received. When disabled, the radio ignores Ack to Emergency Alarms and continues to sent Emergency Alarms until the configured number of attempts have been exhausted

NOTICE:

- This feature is available in Digital mode only in Direct Mode, Single Site and IPSC system (including Scan).
- This feature is also available when Mode (Digital Emergency System) on page 669 is set to **Emergency Alarm** and **Emergency Alarm with Call**.

3.34.1.8

Impolite Retries (Digital Emergency System)

An impolite transmission is a transmission that occurs even when there is activity on the current channel.

The radio tries a number of impolite transmissions to get an acknowledgement and then goes on to try a number of polite transmissions. This feature sets the number of attempts to transmit an emergency alarm impolitely.

Range:

Maximum	Minimum	Increment
15	1	1

NOTICE:
The Alarm Type feature must not be set to Disabled.

This feature is supported in Digital mode only and requires that each radio has a unique radio ID.

3.34.1.9

Polite Retries (Digital Emergency System)

A polite transmission is a transmission that occurs only when the current channel is free of activity.

The radio tries a number of impolite transmissions to get an acknowledgement before trying a number of polite transmissions. This feature sets the number of attempts to transmit an emergency alarm politely.

Range:

Maximum	Minimum	Increment
∞	0	1

NOTICE:
The Alarm Type feature must not be set to Disabled.

The Mode option must not be set to Emergency Alarm with Voice to Follow.

The radio will attempt to transmit indefinitely if the Infinity option is selected.

This feature is supported in Digital mode only.

3.34.1.10
Cycles (Digital Emergency System)

Defines and displays the number of times the radio cycles between transmitting and receiving before going permanently into the receiving mode in the Digital emergency system.

Range:

Maximum	Minimum	Increment
10	1	1

NOTICE:
This feature is disabled if the Mode feature is set to other than Emergency Alarm w/ Voice To Follow.

For Emergency Alarm w/ Voice To Follow, the TX Cycle Time, RX Cycle Time, and Cycles parameters should be set so as not to exceed 50% transmit time.

The Alarm Type feature must not be set to Disabled.

This feature is supported in Digital mode only and requires that each radio has a unique radio ID.

3.34.1.11
Hot Mic Duration (sec) (Digital Emergency System)

This field allows the user to set the Hot Mic Duration for Digital Emergency System.

If the Mode is selected as Emergency Alarm with Voice to Follow, after the radio transmits an emergency alarm, the Hot Mic feature is activated whereby the radio automatically begins transmitting voice for the duration indicated by the Hot Mic Duration. There is no need to press the Push-To-Talk (PTT) button during this time in order to transmit voice. Once this duration expires, the radio automatically dekeys. The call made during this duration is an emergency call.

Range:

Maximum	Minimum	Increment
120 sec	10 sec	10 sec

NOTICE:
The Alarm Type feature must not be set to Disabled.

This feature is supported in Digital mode only.

3.34.1.12
TX Cycle Time (sec) (Digital Emergency System)

Specifies the duration that the radio remains in the transmit mode within one cycle in the Digital emergency system.

Range:

Maximum	Minimum	Increment
120 sec	10 sec	10 sec

NOTICE:
This feature is disabled if the Mode feature is set to other than Emergency Alarm w/ Voice To Follow.

For Emergency Alarm w/ Voice To Follow, the TX Cycle Time, RX Cycle Time, and Cycles parameters should be set so as not to exceed 50% transmit time.

The Alarm Type feature must not be set to Disabled.

This feature is disabled if the Cycles feature is set to 0.

This feature is supported in Digital mode only and requires that each radio has a unique radio ID.

3.34.1.13
RX Cycle Time (sec) (Digital Emergency System)

Specifies the duration that the radio remains in the receive mode within one cycle in the Digital emergency system.

Range:

Maximum	Minimum	Increment
120 sec	10 sec	10 sec

NOTICE:
This feature is disabled if the Mode feature is set to other than Emergency Alarm w/ Voice To Follow.

For Emergency Alarm w/ Voice To Follow, the TX Cycle Time, RX Cycle Time, and Cycles parameters should be set so as not to exceed 50% transmit time.

The Alarm Type feature must not be set to Disabled.

This feature is disabled if the Cycles feature is set to 0.

This feature is supported in Digital mode only and requires that each radio has a unique radio ID.

3.34.1.14
TX Interrupt (Digital Emergency System)

This feature enables the radio to remotely dekey any other radio that is currently transmitting a voice call, in order to place it's own emergency alarm transmission or emergency voice transmission.

The interruption automatically occurs upon a Push-to-Talk (PTT) button press during emergency mode, or an emergency button press.

NOTICE:
This feature is supported in Digital mode only and requires that each radio has a unique radio ID.

3.34.1.15
Preamble (Digital Emergency System)

This feature allows the user to configure the preamble feature for emergency.

The following selections are supported:

- **Default** (existing)
- **Always**

When set to **Always**, the emergency alarm always uses the preamble configured in TX Preamble Duration (ms) on page 213 for every emergency transmission. This allows the scanning radio to land on Emergency on the first attempt.

This is a radio-wide and system-wide feature.

NOTICE:

- This feature is available in Digital mode only in Direct Mode, Single Site and IPSC system (including Scan).
- This feature is also available when Mode (Digital Emergency System) on page 669 is set to **Emergency Alarm**, **Emergency Alarm with Call**, and **Emergency Alarm with Voice to Follow**.

3.35
Capacity Plus Emergency Systems Set

The **Capacity Plus Emergency Systems** set is used by the radio for communication during emergencies when the radio is in Capacity Plus–Single-Site. A maximum of 32 digital emergency systems can be configured.

3.35.1
General (Capacity Plus Emergency Systems)

This section explains the **General** settings of the Capacity Plus Emergency Systems.

3.35.1.1
System Name

This displays the name of the system.

NOTICE: This feature is supported in Digital mode only.

3.35.1.2
Alarm Types

An alarm is a non-voice signal that triggers an alert indication on another radio.

The radio initiates alarm signals when you press the emergency button.

Disabled
The radio is unable to transmit an alarm signal.

Regular
The radio transmits an alarm signal and provides audio and visual indication that it is in emergency mode.

Silent
The radio transmits an alarm signal, but gives no audio or visual indication that it is in emergency mode. It will not unmute to any received audio.

Silent with Voice
The radio transmits an alarm signal, but gives no audio or visual indication that it is in emergency mode. The radio unmutes to a qualified channel activity.

NOTICE:
If the alarm is set to **Disabled**, the following features are disabled:

- Mode
- Hot Mic Duration
- Contact
- Number of Retries
- TX Interrupt

This feature is supported in Digital mode only.

3.35.1.3
Mode

This feature defines the radio behavior when you press the Emergency button.

Emergency Alarm
The radio sends an emergency alarm and exits the emergency mode. This alarm is a non-voice signal that triggers an alert indication on another radio.

Emergency Alarm with Call
An emergency alarm is sent, after which an emergency call can be transmitted by pressing the Push-To-Talk (PTT) button.

Emergency Alarm with Voice to Follow
This option enables the Hot Mic feature, allowing for the programming of the Hot Mic related features, i.e. Hot Mic Duration. An emergency alarm is sent and the microphone is activated for an emergency call. Voice is transmitted without the need to press the Push-To-Talk (PTT) button.

NOTICE:
The Alarm Type feature must not be set to Disabled.

This feature is supported in Digital mode only.

3.35.1.4
Contact

Determines which Group receives the emergency alarm.

It is recommended that only a single radio on a Group be programmed to acknowledge emergency alarms.

NOTICE:
The Alarm Type feature must not be set to Disabled.

This feature is supported in Digital mode only.

3.35.1.5
Number of Retries

A polite transmission is a transmission that occurs only when the current channel is free of activity.

The radio tries a number of impolite transmissions to get an acknowledgment before trying a number of polite transmissions. This feature sets the number of attempts to transmit an emergency alarm politely.

Range:

Maximum	Minimum	Increment
∞	0	1

NOTICE:
The Alarm Type feature must not be set to Disabled.

The Mode option must not be set to Emergency Alarm with Voice to Follow.

The radio will attempt to transmit indefinitely if the Infinity option is selected.

This feature is supported Digital mode only.

3.35.1.6
Cycles

Defines and displays the number of times the radio cycles between transmitting and receiving before going permanently into the receiving mode in the Capacity Plus–Single-Site emergency system.

Range:

Maximum	Minimum	Increment
10	1	1

NOTICE:
This feature is disabled if the Mode feature is set to other than Emergency Alarm w/ Voice To Follow.

For Emergency Alarm w/ Voice To Follow, the TX Cycle Time, RX Cycle Time, and Cycles parameters should be set so as not to exceed 50% transmit time.

The Alarm Type feature must not be set to Disabled.

This feature is supported in Digital mode only.

3.35.1.7
Hot Mic Duration

This field allows the user to configure the Hot Mic Duration.

If the Mode is selected as Emergency Alarm with Voice to Follow, after the radio transmits an emergency alarm, the Hot Mic feature is activated whereby the radio automatically begins transmitting voice for the duration indicated by the Hot Mic Duration. There is no need to press the Push-To-Talk (PTT) button during this time in order to transmit voice. Once this duration expires, the radio automatically dekeys. The call made during this duration is an emergency call.

Range:

Maximum	Minimum	Increment
120 sec	10 sec	10 sec

NOTICE:
The Alarm Type feature must not be set to Disabled.

This feature is supported in Digital mode only.

3.35.1.8

TX Cycle Time

Specifies the duration that the radio remains in the transmit mode within one cycle in the Capacity Plus–Single-Site emergency system.

Range:

Maximum	Minimum	Increment
120 sec	10 sec	10 sec

NOTICE:
This feature is disabled if the Mode feature is set to other than Emergency Alarm w/ Voice To Follow.

For Emergency Alarm w/ Voice To Follow, the TX Cycle Time, RX Cycle Time, and Cycles parameters should be set so as not to exceed 50% transmit time.

The Alarm Type feature must not be set to Disabled.

This feature is disabled if the Cycles feature is set to 0.

This feature is supported in Digital mode only.

3.35.1.9

RX Cycle Time

RX Cycle Time is the duration of when the radio remains in the receive mode within one cycle in the Capacity Plus–Single-Site Emergency System.

Table 52: RX Cycle Time Range

Maximum	Minimum	Increment
120 sec	10 sec	10 sec

NOTICE:
This feature is disabled when the Mode feature is set to other than Emergency Alarm with Voice To Follow.

For Emergency Alarm with Voice To Follow, the TX Cycle Time, RX Cycle Time, and Cycles parameters should be set so as not to exceed 50% transmit time.

The Alarm Type feature must not be set to Disabled.

This feature is disabled if the Cycles feature is set to 0.

This feature is supported in Digital mode only.

3.35.1.10

TX Interrupt

This feature enables the radio to remotely dekey any other radio that is transmitting a voice call to place its own emergency alarm transmission or emergency voice transmission on a Capacity Plus–Single-Site system.

The interruption automatically occurs when you press the emergency button or the Push-to-Talk (PTT) button during an emergency mode.

NOTICE: This feature is supported in Digital mode only.

3.36
Phone Systems Set

The **Phone Systems** set is used to configure the phone system to allow a radio to initiate and receive calls from a simplex phone user on all system configurations (such as Conventional Single Site, IP Site Connect, and Capacity Plus–Single-Site).

The following sections contain all the supported fields:

3.36.1
General (Phone Systems)

The **General** section of the Phone Systems set contains the following fields:

3.36.1.1
System Name (Phone System)

This displays the name of the system.

NOTICE:
For MOTOTRBO Conventional radios, this feature is supported in Digital mode only.

This feature is applicable to MOTOTRBO Conventional radios and 3600 Trunking capable radios.

3.36.1.2
Gateway ID

Configures the ID of the Repeater that the Phone Patch is connected to.

This ID represents the landline phone user's identity in the subscriber radios.

Range:

Maximum	Minimum	Increment
65535	1	1

NOTICE:
This feature is supported in Digital mode only.

3.36.1.3
Access Code

This field allows the user to configure the phone system access code.

NOTICE: For Enhanced Telephony capable radios, special characters " **:** *, **#** " and **P** are not supported in the access code.

This is to grant access for the radio to perform certain call type (i.e. International, Long Distance, Toll, Local, 911, etc…) per the radio access code. For MOTOTRBO Conventional radios, the access code is made up of the access command and the multi-digit access prefix. The recommended access command is typically the * sign, but is programmable in most phone patches. It is used to wake-up the phone patch from the radio system. The multi-digit access prefix is used to limit the radio user access. It is commonly up to four digits long. Some phone patches allow each prefix to be configurable to allow or block calls starting with 0, 1, 9, etc. This then essentially allows a group of radio users to have access to local dialing, but not long distance, or toll numbers, etc. If provisioned, the radio will not prompt the user for it. If left empty, the radio will prompt the user after the phone number is entered. The user must enter both the multi-digit access prefix and the access command, for example (123*). The order (*123 or 123*) may be different depending on phone patch programming. It is important to

note that if access restrictions are not required, the system still requires the access command be provided.

Without the access command, the phone patch will not be accessible. In most cases, the access command should be preprogrammed if no access restrictions are required. The user can enter up to ten characters. Valid characters are DTMF digits 0-9, *, #, and the pause character "P". For 3600 Trunking capable radios, the access code allows the user to enter DTMF digits 0-9 and the pause character "P".

NOTICE:
This feature have a maximum of 10 characters.

This feature is hidden when the Digital Phone Patch feature is disabled.

For MOTOTRBO Conventional radios, this feature is supported in Digital mode only.

For non-display radio models, this feature must not be empty. If this feature is set to empty (by tabbing or moving out of this feature), the value is set to 0.

This feature is applicable to MOTOTRBO Conventional radios and 3600 Trunking capable radios.

For radios that operate under Capacity Max Open Radio mode, if the code is not required, the value must be empty (for display model) or set to a single pause character "P" (display and non-display model).

3.36.1.4
Deaccess Code

This field allows the user to configure the phone system deaccess code on the subscriber radio.

For MOTOTRBO Conventional radios, the deaccess code is sent to the phone patch when attempting to disconnect the phone call. The user can enter up to ten characters. Valid characters are DTMF digits 0-9, *, #, and the pause character "P". For 3600 Trunking capable radios, the deaccess code allows the user to enter DTMF digits 0-9 and the pause character "P".

NOTICE:
This feature have a maximum of 10 characters.

This feature is hidden when the Digital Phone Patch feature is disabled.

For 3600 Trunking capable radios, for non-display models, this feature must not be empty. If the field is set to empty, on tabbing or moving out of this field, the value shall be set to 0 value.

For MOTOTRBO Conventional radios, this feature is supported in Digital mode only.

This feature is applicable to MOTOTRBO Conventional radios and 3600 Trunking capable radios.

For radios that operate under Capacity Max Open Radio mode, if the code is not required, the value must be empty (for display model) or set to a single pause character "P" (display and non-display model).

3.36.2
DTMF (Phone Systems)

The **DTMF** section of the Phone Systems set contains the following fields:

3.36.2.1
Pretime (ms) (Phone System)

Configures the duration of silence milliseconds (ms) prior to sending the first DTMF tone of the Access Code.

Range:

Maximum	Minimum	Increment
4500 ms	0 ms	20 ms

Range:

Maximum	Minimum	Increment
6375 ms	25 ms	25 ms

NOTICE:
For MOTOTRBO Conventional radios, this feature is supported in Digital mode only.

This feature is applicable to MOTOTRBO Conventional radios and 3600 Trunking capable radios.

3.36.2.2
TX Tone Duration (ms)

Configures the duration of the DTMF tone digits in milliseconds (ms) for a given subscriber phone system.

This applies to the access code, de-access code, phone number and over-dial digits which are generated by the subscriber as DTMF tones.

Range:

Maximum	Minimum	Increment
6400 ms	40 ms	20 ms

Range:

Maximum	Minimum	Increment
6375 ms	25 ms	25 ms

NOTICE:
For MOTOTRBO Conventional radios, this feature is supported in Digital mode only.

This feature is applicable to MOTOTRBO Conventional radios and 3600 Trunking capable radios.

3.36.2.3
TX Tone Interval (ms)

Configures the duration of the intervals between the DTMF tone digits in a transmission sequence in milliseconds (ms) for a given subscriber phone system.

This applies to the access code, de-access code, phone number and over-dial digits which are generated by the subscriber as DTMF tones.

Range:

Maximum	Minimum	Increment
6400 ms	40 ms	20 ms

Range:

Maximum	Minimum	Increment
6375 ms	25 ms	25 ms

NOTICE:
For MOTOTRBO Conventional radios, this feature is supported in Digital mode only.

This feature is applicable to MOTOTRBO Conventional radios and 3600 Trunking capable radios.

3.36.2.4

Pause Duration (ms)

Configures the duration of the silence in milliseconds (ms) between the Access Code and the dialing digits.

The pause is sometimes required after the phone system access (for a dial tone) or when automatically dialing a phone number with an extension number through a phone switchboard. If this duration is too short, the first dialing digits will not be received by the phone system.

Range:

Maximum	Minimum	Increment
10000 ms	500 ms	500 ms

Range:

Maximum	Minimum	Increment
4000 ms	500 ms	500 ms

NOTICE:
For MOTOTRBO Conventional radios, this feature is supported in Digital mode only.

This feature is applicable to MOTOTRBO Conventional radios and 3600 Trunking capable radios.

3.36.2.5

Pause Duration (ms)

Configures the duration of the silence in milliseconds (ms) between the Access Code and the dialing digits.

The pause is sometimes required after the phone system access (for a dial tone) or when automatically dialing an a phone number with an extension number through a phone switchboard. If this duration is too short, the first dialing digits will not be received by the phone system.

Range:

Maximum	Minimum	Increment
10000 ms	500 ms	500 ms

Range:

Maximum	Minimum	Increment
4000 ms	500 ms	500 ms

NOTICE:
For MOTOTRBO Conventional radios, this feature is supported in Digital mode only.

This feature is applicable to MOTOTRBO Conventional radios and 3600 Trunking capable radios.

3.37
Encoder Set

The **Encoder** set is used to enable or disable the Multicall Advanced User Mode and configure the settings for address range and status range.

The following sections contain all the supported fields:

3.37.1
General (Encoder)

The **General** section of the Encoder set contains the following fields:

3.37.1.1
Multicall Advanced User Mode

Sets the 5 Tone operating mode.

When enabled, the user mode is Advanced User. When disabled, the user mode is Basic User.

Basic User

Basic User 5 Tone Calls:In this mode, it is only possible to use a preprogrammed telegram button to transmit the telegram. A preprogrammed telegram can be assigned to any of the following buttons: Call 1, Call 2, Call 3, Call 4, Call 5, Call 6, or PTT button. The Address Send button is available for the Display model only. The variable digit positions of the RM programmed telegram must be substituted for the correct number of digits by the radio before transmission. The user needs to enter the variable called radio ID digits ("U1" - "U8") before selecting the preprogrammed telegram in manual dial. The radio will also substitute this user-entered digits into the telegram before transmission. The user is able to scroll through the Contacts list via the menu and select an entry. Pressing the preprogrammed telegram button causes the radio to substitute the Contact list entry into the preprogrammed telegram and transmit it. Basic User Telegram Decode:On decode of a received telegram sequence, the radio attempts to find an entry in the Contacts list where the decoded ID digits match the ID digits of an entry in the Contacts list. If Call Back is enabled, the current contents of the variable digits in the address buffer will be overwritten with the digits from the corresponding positions of the received telegram. Basic User Status Calls:The user must enter the required status digits ("S1" - "S3") and then select the preprogrammed telegram button. The preprogrammed telegram can be assigned to any of the following buttons: Call 1, Call 2, Call 3, Call 4, Call 5, Call 6, or PTT button. The radio will substitute the user-entered digits into the telegram and then send it. This mode has the following limitations:No Telegram parameter in the Missed Calls list. No Telegram used for Call Back. No Telegram parameter in the decoder (the matching Encode Telegram parameter in decoder setting is used by the Advanced user). Call Log only saves the call initiator ID or StatusThe user cannot enter a telegram by manual dial but only select a preprogrammed telegram.

Advanced User

Advanced User 5 Tone Calls:In this mode, the user can use either the preprogrammed telegram buttons or Address Send button (available for Display model only) to transmit the telegram. The user can also enter the telegram number (1 - 9) followed by the variable called radio ID digits ("U1"

- "U8") in manual dial. The user then use either the Address Send button or a preprogrammed telegram button to transmit. If the preprogrammed telegram button is used, the variable digits are substituted into the preprogrammed telegram before transmission. The user is also able to scroll through the Contacts list, select an entry and press the Address Send button to transmit the associated telegram for that entry. This allows the user more choices of selectable telegrams (including preprogrammed telegrams associated with the Call buttons). However, if a preprogrammed telegram button is pressed before transmission, then the entered telegram is ignored and the digits from its corresponding positions will be substituted into the variable digit positions of the preprogrammed telegram, assigned to that button and then transmitted.Example:Telegram number entered = 1 i.e. 45(A1)(A2)(A3))ID = 123Final telegram = 45123. (Press PTT or Address Send button to send the telegram.)If a preprogrammed call button has a value of 3 (3 = 78(A1)(A2)(A3)), pressing the button before the PTT or Address Send button may result in the following telegram being sent instead:78123 where the telegram has now changed from 1 to 3. If the telegram IDs are used to define some places, it may well mean that the calling radios position has been given as Gatwick instead of Heathrow. Advanced User Telegram Decode:A decode telegram format may match the format of a corresponding telegram which is used for alias display or Call Back, it identifies that telegram number, and is used as follows:On decode, the radio attempts to find an entry in the Contacts list where the decoded ID digits match the ID digits of an entry in the Contacts list (by identity, position and number). In addition, the decoders Matching Encode Telegram must also match the Contacts list entry telegram.Example:4123. Successfully checked against the Contacts list may cause the following to be displayed:‘John - Gatwick’ where 123 = John, the callers identity and 44 = his location (Gatwick)If there is no name, the telegram number and ID is displayed. On decode, if call back is enabled, the current contents of the address buffer will be overwritten with both the variable digit ids and the decoders Matching Encode Telegram. On completion of the call, the clear down sequence is sent to reset the system if required. Call set up and clear down telegrams/sequences may be assigned to buttons. Advanced User Status:Telegrams can be set up in several different ways with variable digits in different places. Example:1. A status telegram can include an address and have variable digits for the status number.2. It may have variable digits for both the address and status number.3. It may just have variable digits for the address.4. It may be a complete telegram with no variable digits. A programmed Status button can be used for direct entry into the menu’s Status list, or the user may enter the menu in the normal way. Once the Status list is entered, the last person contacted will be displayed and this could be from the Contacts list, Call Back or manual dial. A selected entry from the Status list may be sent (if it does not require direct entry of digits) by pressing the Address Send button.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode for Display model only.

3.37.2
Multicall Address (Encoder)

The **Multicall Address** section of the Encoder set contains the following fields:

3.37.2.1
General Lockout Digit (Multicall Address)

Specifies the digits that are barred from use in any position in telegrams that have variable digit positions.

The choices are None and numbers from 0 to 9.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode for Display model only.

3.37.2.2

Position Lockout Digit (Multicall Address)

Specifies a digit that will be barred from use in positions specified by the Position for Position Lockout Digit in telegrams that have variable digit positions.

The choices are None and numbers from 0 to 9.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode for Display model only.

3.37.2.3

Position for Position Lockout Digit (Multicall Address)

Specifies the position in variable digit telegrams where Position Lockout Digit cannot be placed.

The choices are numbers from 1 to 8.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode for Display model only.

3.37.2.4

Position for Group Lockout Digit (Multicall Address)

Specifies the position(s) in variable digit telegrams where Group Digits cannot be placed.

A user can choose one or multiple numbers from 1 to 8.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode for Display model only.

3.37.2.5

Address Range 1

Allows the user to enable or disable the Multicall Address Range 1 Minimum and Maximum.

The Minimum and Maximum define the number entry range within the variable digit telegrams.

NOTICE:
Minimum and Maximum must have the same number of digits.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode for Display model only.

3.37.2.6

Address Range 2

Allows the user to enable or disable the Multicall Address Range 2 Minimum and Maximum.

The Minimum and Maximum define the number entry range within the variable digit telegrams.

NOTICE:
Minimum and Maximum must have the same number of digits.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode for Display model only.

3.37.2.7

Address Range 3

Allows the user to enable or disable the Multicall Address Range 3 Minimum and Maximum.

The Minimum and Maximum define the number entry range within the variable digit telegrams.

NOTICE:
Minimum and Maximum must have the same number of digits.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode for Display model only.

3.37.2.8

Minimum (Address Range 1)

Defines the minimum number entry within the variable digit telegrams for Address Range 1.

Range:

Maximum	Minimum	Increment
99999999	0	1

NOTICE:
This feature is enabled if Address Range 1 is enabled.

The value of this feature must not be greater than the Maximum.

This feature is supported in Analog mode only.

3.37.2.9

Minimum (Address Range 2)

Defines the minimum number entry within the variable digit telegrams for Address Range 2.

Range:

Maximum	Minimum	Increment
99999999	0	1

NOTICE:
This feature is enabled if Address Range 2 is enabled.

The value of this feature must not be greater than the Maximum.

This feature is supported in Analog mode only.

3.37.2.10

Minimum (Address Range 3)

Defines the minimum number entry within the variable digit telegrams for Address Range 3.

Range:

Maximum	Minimum	Increment
99999999	0	1

NOTICE:
This feature is enabled if Address Range 3 is enabled.

The value of this feature must not be greater than the Maximum.

This feature is supported in Analog mode only.

3.37.2.11

Maximum (Address Range 1)

Defines the maximum number entry within the variable digit telegrams for Address Range 1.

Range:

Maximum	Minimum	Increment
99999999	0	1

NOTICE:
This feature is enabled if Address Range 1 is enabled.

The value of this feature must always be greater or equal to the value of Minimum.

This feature is supported in Analog mode only.

3.37.2.12

Maximum (Address Range 2)

Defines the maximum number entry within the variable digit telegrams for Address Range 2.

Range:

Maximum	Minimum	Increment
99999999	0	1

NOTICE:
This feature is enabled if Address Range 2 is enabled.

The value of this feature must always be greater or equal to the value of Minimum.

This feature is supported in Analog mode only.

3.37.2.13

Maximum (Address Range 2)

Defines the maximum number entry within the variable digit telegrams for Address Range 2.

Range:

Maximum	Minimum	Increment
99999999	0	1

NOTICE:
This feature is enabled if Address Range 2 is enabled.

The value of this feature must always be greater or equal to the value of Minimum.

This feature is supported in Analog mode only.

3.37.2.14

Maximum (Address Range 3)

Defines the maximum number entry within the variable digit telegrams for Address Range 3.

Range:

Maximum	Minimum	Increment
99999999	0	1

NOTICE:
This feature is enabled if Address Range 3 is enabled.

The value of this feature must always be greater or equal to the value of Minimum.

This feature is supported in Analog mode only.

3.37.3

Multicall Status (Encoder)

The **Multicall Status** section of the Encoder set contains the following fields:

3.37.3.1

General Lockout Digit (Multicall Status)

Specifies the digits that are barred from use in any position in telegrams that have variable digit positions.

The choices are None and numbers from 0 to 9.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode for Display model only.

3.37.3.2

Position Lockout Digit (Multicall Status)

Specifies a digit that will be barred from use in positions specified by the Position for Position Lockout Digit in telegrams that have variable digit positions.

The choices are None and numbers from 0 to 9.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode for Display model only.

3.37.3.3

Position for Position Lockout Digit (Multicall Status)

Specifies the position in variable digit telegrams where Position Lockout Digit cannot be placed.

The choices are numbers from 1 to 3.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode for Display model only.

3.37.3.4

Position for Group Lockout Digit (Multicall Status)

Specifies the position(s) in variable digit telegrams where Group Digits cannot be placed.

A user can choose one or multiple numbers from 1 to 3.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode for Display model only.

3.37.3.5

Status Range 1

Allows the user to enable or disable the Multicall Status Range 1 Minimum and Maximum.

The Minimum and Maximum define the number entry range within the variable digit telegrams.

NOTICE:
Minimum and Maximum must have the same number of digits.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode for Display model only.

3.37.3.6

Status Range 2

Allows the user to enable or disable the Multicall Status Range 2 Minimum and Maximum.

The Minimum and Maximum define the number entry range within the variable digit telegrams.

NOTICE:
Minimum and Maximum must have the same number of digits.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode for Display model only.

3.37.3.7

Status Range 3

Allows the user to enable or disable the Multicall Status Range 3 Minimum and Maximum.

The Minimum and Maximum define the number entry range within the variable digit telegrams.

NOTICE:
Minimum and Maximum must have the same number of digits.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode for Display model only.

3.37.3.8

Minimum (Status Range 1)

Defines the minimum number entry within the variable digit telegrams for Status Range 1.

Range:

Maximum	Minimum	Increment
999	0	1

NOTICE:
This feature is enabled if Status Range 1 is enabled.

The value of this feature must not be greater than the Maximum.

This feature is supported in Analog mode only.

3.37.3.9

Minimum (Status Range 2)

Defines the minimum number entry within the variable digit telegrams for Status Range 2.

Range:

Maximum	Minimum	Increment
999	0	1

NOTICE:
This feature is enabled if Status Range 2 is enabled.

The value of this feature must not be greater than the Maximum.

This feature is supported in Analog mode only.

3.37.3.10

Minimum (Status Range 3)

Defines the minimum number entry within the variable digit telegrams for Status Range 3.

Range:

Maximum	Minimum	Increment
999	0	1

NOTICE:
This feature is enabled if Status Range 3 is enabled.

The value of this feature must not be greater than the Maximum.

This feature is supported in Analog mode only.

3.37.3.11

Maximum (Status Range 1)

Defines the maximum number entry within the variable digit telegrams for Status Range 1.

Range:

Maximum	Minimum	Increment
999	0	1

NOTICE:
This feature is enabled if Status Range 1 is enabled.

The value of this feature must always be greater or equal to the value of Minimum.

This feature is supported in Analog mode only.

3.37.3.12
Maximum (Status Range 2)

Defines the maximum number entry within the variable digit telegrams for Status Range 2.

Range:

Maximum	Minimum	Increment
999	0	1

NOTICE:
This feature is enabled if Status Range 2 is enabled.

The value of this feature must always be greater or equal to the value of Minimum.

This feature is supported in Analog mode only.

3.37.3.13
Maximum (Status Range 3)

Defines the maximum number entry within the variable digit telegrams for Status Range 3.

Range:

Maximum	Minimum	Increment
999	0	1

NOTICE:
This feature is enabled if Status Range 3 is enabled.

The value of this feature must always be greater or equal to the value of Minimum.

This feature is supported in Analog mode only.

3.38
Encoder Sequences Set

The **Encoder Sequences** set is used to select and sequence a signaling system.

The following section contains all the supported fields:

3.38.1
General (Encoder Sequences)

The **General** section of the Encoder Sequences set contains the following fields:

3.38.1.1
Sequence Name

Displays the 5 Tone encoder sequence name.

NOTICE:
This feature is supported in Analog mode only.

3.38.1.2
Signaling System (Sequences)

Associates a 5 Tone system to each 5 Tone encode tone sequence.

The choices are all available 5 Tone Signaling Systems.

NOTICE:
The value of this feature is set to the first available choice if the selected choice is deleted or the pasted value does not exist in the available choices.

This feature is supported in Analog mode only.

3.38.1.3
Sequence

Specifies 1 to 12 sequence (for MOTOTRBO Light radios and MOTOTRBO 2.0).

Alphanumeric Display Mobile radios with DTP capability only) or 20 (for MOTOTRBO 2.0 radios except for Alphanumeric Display Mobile radios with DTP capability only) tones to make a 5 Tone encode tone sequence. The tone is a single frequency audible (300-3000 Hz) tone and the frequency and duration are specified by the sequence signaling standard. The user can input the following digit to represent a tone:

- a fixed number digit: 0 - 9
- a fixed character digit: "A"-"F"
- a variable address digit: "A1" - "A8"
- a variable status digit: "S1" - "S3"
- a variable radio ID digit: "U1" - "U8"
- a fixed single tone digit: "T1" - "T2"
- a fixed group tone digit: "G"

For Display model, each tone can be a fixed digit of 0-9 or A-F, a variable address digit of A1-A8, a variable status digit of S1-S3, a variable subscriber ID digit of U1-U8, a fixed single tone digit of T1-T2 and a fixed group tone digit.

For Non-Display model, each tone can be a fixed digit of 0-9 or A-F, a variable subscriber ID digit of U1-U8, a fixed single tone digit of T1-T2 and a fixed group tone digit.

The user then attaches the specified encoded tone sequence to a telegram in the Sequence 1-3 parameters.

NOTICE:
This feature must not be empty.

The user must use "(" character as a prefix and ")" character as a suffix to specify an address variable, a status variable, a radio ID variable, and a single tone variable.

The value of this feature is reset to the original value if the user input is out of range or blank.

The value of this feature is automatically set to an upper case if the user input is lower case.

The value of this feature is automatically corrected if the user input is missing an opening bracket "(" or a closing bracket ")".

Variable digits in a telegram must be substituted for the correct number of digits before transmission.

This feature is supported in Analog mode only.

3.38.1.4
Pretime (ms) (Sequences)

Sets the duration in milliseconds (ms) that the radio waits for the repeater to reach its operating power output before the radio sends its encode sequences.

It is recommended to set this duration above 400ms when transmitting a telegram on a 5 Tone channel with Private Line (PL) or Digital Private Line (DPL), or when transmitting on a Repeater mode. To increase the scan landing rate of a 5 Tone telegram on the decoding radio, calculates the recommended Pretime setting on the encoding radio using the formula below. After that, configures the Signaling Hold Time as recommended by the formula in the Notes section of the topic.

CSQ and analog mode scan list
100 x (total number of scan member - 1)

CSQ and mixed mode scan list
50 + 200 x (total number of scan member - 1)

PL and analog mode scan list
50 + 100 x (total number of scan member - 1)

PL and mixed mode scan list
50 + 200 x (total number of scan member - 1)

Range:

Maximum	Minimum	Increment
2550 ms	0 ms	10 ms

NOTICE:
This feature is disabled if set to 0.

The value of this feature must not be 0 (disabled) at the same time with the Extended 1st Tone Duration feature. If the value is the same, this value will automatically be incremented by the Increment value.

This feature is supported in Analog mode only.

3.38.1.5
Extended 1st Tone Duration and Telegram 1st Tone Duration (ms)

Specifies an extended first tone duration in milliseconds (ms) for each sequence.

If a transmitted sequence has an extended first tone, the receiver decoders must know what the duration of this extended first tone is, otherwise the sequence would be corrupted on decode. The length of the tone would not be of the correct duration for the standard used (CCIR, EEA, ZVEI etc). This may be used with the Telegram Repeat feature for multi-channel systems that use the scan feature.

For Telegram 1st Tone Duration (ms), total first tone duration for MOTOTRBO radios are extended 1st tone duration plus default tone duration. For Professional Conventional Series radios, the extended first tone duration field is the total length of the first tone duration. Because of the differences in the expected duration of the first tone, the Professional Series radios will trigger time out while decoding the first tone.

Range:

Maximum	Minimum	Increment
2550 ms	0 ms	10 ms

Telegram 1st Tone Duration (ms) Example: Professional Conventional Series Radios Setting

Extended First Tone	800 ms
5 tone Signalling Standard	CCIR 100 ms
Telegram 1st Tone Duration	Extended First Tone = 800 ms

Telegram 1st Tone Duration (ms) Example: MOTOTRBO Conventional Radios Setting

Extended First Tone	800 ms
5 Tone Signalling Standard	CCIR 100 ms
Telegram 1st Tone Duration	Extended First Tone (800 ms) + 5 Tone Signalling Standard (100 ms) = 900 ms

NOTICE:
This feature is disabled if set to 0.

The value of this feature must not be 0 (disabled) at the same time with the Pretime feature. If the value is the same, this value will automatically be incremented by the Increment value.

This feature is supported in Analog mode only.

3.39
Encoder Status Set

The **Encoder Status** set is used to specify an alias for each encoder status list entry. The range for the alias is up to 16 UCS-2 characters.

NOTICE: This feature is disabled if the Use Decoder Status List feature is enabled.
This feature is supported in Analog mode only.

The following section contains all the supported fields:

3.39.1
General (Encoder Status)

The **General** section of the Encoder Status set contains the following fields:

3.39.1.1
Only Use Decoder Status List

Allows the user to enable or disable the Only Use Decoder Status List feature.

If enabled, the encode Status list is disabled and decode Status list is used for both the encode and decode status.

NOTICE:
This feature is supported in Analog mode only.

3.39.1.2
Name (Encoder)

Specifies an alias for each encoder status list entry.

The range for the alias is up to 16 UCS-2 characters.

NOTICE:
This feature is disabled if the Use Decoder Status List feature is enabled.

This feature is supported in Analog mode only.

3.39.1.3
Status (Encoder)

Specifies a status value from 1 to 3 variables.

The user can use the following input to represent a variable:

- a fixed number digit: 0 - 9
- a fixed character digit: "A"-"F"
- a variable radio ID digit: "U1" - "U8"
- a fixed single tone digit: "T1" - "T2"
- a fixed group tone digit: "G"

NOTICE:
This feature is disabled if the Use Decoder Status List feature is enabled.

The user must use "(" character as a prefix and ")" character as a suffix to specify a radio ID variable and a single tone variable.

The value of this feature is reset to the original value if the user input is out of range or blank.

The value of this feature is automatically set to an upper case if the user input is lower case.

The value of this feature is automatically corrected if the user input is missing an opening bracket "(" or a closing bracket ")".

This feature is supported in Analog mode only.

3.40
Telegrams Set

The **Telegrams** set is used to configure a 5 Tone telegram. A 5 Tone telegram is composed of one to three 5 Tone sequences. To make a selective call, the radio can be programmed to send up to three 5 Tone sequences in rapid succession. Each encode sequence can contain only one type of signaling or DTMF, but Telegrams can contain encode sequences with different signaling. For example, sequence 1 ZVEI sequence 2 DTMF. The 5 tone sequence opens a telephone interconnect, and the DTMF dials the phone number. Each radio can be programmed with up to 32 telegrams.

The following section contains all the supported fields:

3.40.1
General (Telegrams)

The **General** section of the Telegrams set contains the following fields:

3.40.1.1
Repeat Counter

Defines the number of times the encoder telegram is repeated.

Every valid receive decode will cancel this function.

Range:

Maximum	Minimum	Increment
255	1	1

NOTICE:
This feature is supported in Analog mode only.

3.40.1.2
Periodic Repeat Time (sec)

Defines when the radio automatically sends out its PTT Keyup for Telegram Repeat.

Range:

Maximum	Minimum	Increment
255 sec	1 sec	1 sec

NOTICE:
This feature is supported in Analog mode only.

3.40.1.3
Minimum Keyup for Repeat (sec)

Defines the minimum time interval between successive, automatic, telegram transmissions by the radio.

These transmissions will coincide with the pressing of the PTT button. The time before sending the first telegram after keyup is defined only by the Periodic Repeat Time.

Range:

Maximum	Minimum	Increment
255	0	1

NOTICE:
This timer must be less than the Periodic Repeat Time.

This feature is supported in Analog mode only.

3.40.1.4
Power Up Auto Telegram

Configures a 5 Tone telegram that will be automatically sent after the radio has powered up.

The choices are None and all available telegrams.

NOTICE:
This feature is set to None if the selected telegram is deleted.

This feature is supported in Analog mode only.

3.40.1.5
Power Down Auto Telegram

Configures a 5 Tone telegram that will be automatically sent after the radio has powered down.

The choices are None and all available telegrams.

NOTICE:
This feature is set to None if the selected telegram is deleted.

This feature is supported in Analog mode only.

3.40.1.6
Power Up Auto Telegram Revert Channel

Specifies a channel for the 5 Tone Power Up Auto Telegram.

The choices are Selected and all available 5 Tone channels.

NOTICE:
This feature is set to Selected if the selected channel is deleted or the pasted value does not exist in the available choices.

This feature is supported in Analog mode only.

3.40.1.7

Power Up Auto Telegram Revert Channel Zone

This field allows the user to specify a channel zone to encode the automatic sent telegram after the radio has powered up.

3.40.1.8

Power Down Auto Telegram Revert Channel

Specifies a channel for the 5 Tone Power Down Auto Telegram.

The choices are Selected and all available 5 Tone channels.

NOTICE:
This feature is set to Selected if the selected channel is deleted or the pasted value does not exist in the available choices.

This feature is supported in Analog mode only.

3.40.1.9

Power Down Auto Telegram Revert Channel Zone

This field allows the user to specify a channel to encode the automatically sent telegram before the radio powers down

3.40.1.10

Telegram Name

Displays the 5 Tone encoder telegram name.

NOTICE:
This feature is supported in Analog mode only.

3.40.1.11

Sequence 1

Specifies the 5 Tone encoder telegram Sequence 1. The choices are all available sequences.

NOTICE:
The value of this feature is set to one of the available choices if the selected sequence is deleted or the pasted value does not exist in the available choices.

This feature is supported in Analog mode only.

3.40.1.12

Sequence 2

Specifies 5 Tone encoder telegram Sequence 2. The choices are None and all available sequences.

NOTICE:
The value of this feature is set to one of the available choices if the selected sequence is deleted or the pasted value does not exist in the available choices.

This feature is supported in Analog mode only.

3.40.1.13

Sequence 3

Specifies 5 Tone encoder telegram Sequence 3. The choices are None and all available sequences.

NOTICE:
This feature is enabled when Sequence 2 is not set to None.

The value of this feature is set to one of the available choices if the selected sequence is deleted or the pasted value does not exist in the available choices.

This feature is supported in Analog mode only.

3.40.1.14

Acknowledge Expected

Defines how the radio handles telegram encode acknowledgement before voice transmission is allowed on the calling radio.

None
The radio does not expect an acknowledgement before voice transmission is allowed on the calling radio.

ACK1
ACK1 is required to allow the calling radio to transmit voice.

ACK1 with Answer
ACK1 and voice transmission is required to allow the calling radio to transmit.

NOTICE:
This feature is supported in Analog mode only.

3.40.1.15

Telegram Repeat

This feature allow the encoded telegram to be repeated.

When enabled, this feature allows the encoded telegram to be repeated when the following event happens:

- An acknowledgement is not received within the acknowledge expected duration, or
- The Tx Admit Criteria is not satisfied on the first attempt or any subsequent attempts. However, if the transmit attempt fails due to decode authorization or channel set as RX Only, the call attempt will fail.

The telegram may be repeated until it reaches the maximum number of retries specified in the Repeat Counter. This feature can be programmed for any of the Acknowledge Expected options (including No ACK).

NOTICE:
This feature is supported in Analog mode only.

3.41

Decoder Set

The **Decoder** set is used to configure the expect acknowledgement duration and time-out value from the target radio after sending a 5 Tone encode telegram.

The following section contains all the supported fields:

3.41.1
General (Decoder)

The **General** section of the Decoder set contains the following fields:

3.41.1.1
Acknowledge Expected Duration (sec)

Specifies the duration to expect an acknowledgement from the target radio after sending a 5 Tone encode telegram with the Acknowledgement Expected feature not set to None.

Range:

Maximum	Minimum	Increment
255 sec	1 sec	1 sec

NOTICE:
This feature is supported in Analog mode only.

3.41.1.2
Sequence TOT (ms)

Specifies the maximum delay between 2 successive 5 Tone decode sequences.

Range:

Maximum	Minimum	Increment
5100 ms	25 ms	25 ms

NOTICE:
This feature is supported in Analog mode only.

3.42
Decoder Status List Items

The **Decoder Status List Items** set allows the user to add a decoder status.

The following section contains all the supported fields:

3.42.1
General (Decoder Status List Items)

The **General** section of the Decoder Status List Items set contains the following fields:

3.42.1.1
Name (Decoder)

Specifies an alias for each decoder status list entry.

The range for the alias is up to 16 UCS-2 characters.

NOTICE:
This feature is supported in Analog mode only.

3.42.1.2
Status (Decoder)

Specifies a status value from 1 to 3 variables.

The user can use the following input to represent a variable:.

- a fixed number digit: 0 - 9
- a fixed character digit: "A"-"F"
- a variable radio ID digit: "U1" - "U8"
- a fixed single tone digit: "T1" - "T2"
- a fixed group tone digit: "G"

NOTICE:
The user must use "(" character as a prefix and ")" character as a suffix to specify a radio ID variable and a single tone variable.

The value of this feature is reset to the original value if the user input is out of range or blank.

The value of this feature is automatically set to an upper case if the user input is lower case.

The value of this feature is automatically corrected if the user input is missing an opening bracket "(" or a closing bracket ")".

This feature is supported in Analog mode only.

3.43
Decoder Definitions Set

The **Decoder Definitions** set is used to configure up to 16 definitions, each of which can be enabled/disabled per personality. The same signaling system is used for each decode sequence within the telegram, hence signaling systems are assigned per decoder. This assignment is to avoid problems that arise from signaling systems that use tone frequencies, which overlap, with tone frequencies used by other signaling systems.

The following section contains all the supported fields:

3.43.1
General (Decoder Definitions)

The **General** section of the Decoder Definitions set contains the following fields:

3.43.1.1
Definition Name

Displays the 5 Tone decoder definition name.

NOTICE:
This feature is supported in Analog mode only.

3.43.1.2
5 Tone Signaling System

Specifies one 5 Tone Signaling System.

The choices are all the available 5 Tone Signaling Systems.

NOTICE:
This feature is supported in Analog mode only.

3.43.1.3

Decoder Type

Determines the type of action taken by the radio on receiving a valid telegram.

The type of action can be from lifting the squelch and opening the radios audio circuits for an individual call sequence, to instigating an emergency and displaying information if the radio has a display or giving alerts.

General

On decoding the sequence, the radio starts a 5 Tone call. The decoder assumes voice to follow the encode telegram.

Incoming Emergency

When an emergency decode is received, any further calls will not interrupt the emergency call, either during the call or while the call is waiting to be answered. The incoming emergency alert will be sounded. The radio emergency can be reset on successful decode of the appropriate emergency exit sequence. If Call Back is enabled, and non-emergency calls are received, the emergency call remains active for call back. It is possible to use status messaging for emergency calls. Reception of a decode telegram with the status digits matching an entry for emergency in the status list, will cause that entry, indicating emergency, to be displayed.

Priority

When a priority decode is received, any further non priority/priority calls will not interrupt the priority call, either during the call or while the call is waiting to be answered. The incoming priority alert will be sounded. It will be interrupted if an Emergency sequence is decoded.

Emergency Exit

When an emergency exit decode is received while in an emergency mode, the radio exits the emergency Mode.

Stun

On decoding the sequence, the radio is 'stunned'. All attempts at user activity, except powering on/off, are ignored. The radio display is blank and the only received signal action by the radio is the unstun decode sequence. This is similar to the MOTOTRBO Radio Disable feature.

Unstun

On decoding the sequence, the radio is 'unstunned'. The radio reverts to the normal radio operation. The radio may also be unstunned by reprogramming the radio. This is similar to the MOTOTRBO Radio Enable feature.

Clear Down

On decoding the sequence, the radio ends the current call session.

Silent Interrogate

On decoding the sequence, the radio is interrogated without the user knowing it. The radio transmits an ACK. This is similar to the MOTOTRBO Radio Check feature.

ACK1/Ringing

If ACK1 is received in response to the transmission of a telegram with the Acknowledge Expected feature set to ACK 1 with Answer, the transmitting radio waits for the receiving radio to answer before being allowed to transmit.

ACK1/Authorization

If ACK1 and authorization decode is received in response to the transmission of a telegram with the Acknowledge Expected feature set to ACK 1, the transmitting radio is allowed to transmit.

NOTICE:
This feature is supported in Analog mode only.

3.43.1.4

Group Type

Specifies the group type for each 5 Tone decoder.

Two types of group calls are supported.

Standard

For standard group call, a group position will be a position(s) in the decode sequence at which the radio will accept either the group tone or the individual tone. After detection of a valid group tone, all subsequent tones of the sequence must also be group tones for the sequence to be recognized as a call for the radio. I.e. Group tones run consecutively in the sequence from the last tone towards the first tone. Note: Consecutive group tones will be subject to auto 'R' insertion. Example: Radio ID is: 1 2 3 4 5. Group digits: 1 2 3 G G. Radio will respond to:12345 (Individual Call). 123GG (Group of up to 100 radios). 1234G (Sub-Group of 10 radios).

Expanded

For expanded group call, a group position will be a position at which the radio will accept either the group tone or the individual tone. Group tones will not be accepted in positions other than group positions. Group positions can be random throughout the sequence. Example: Radio ID is: 1 2 3 4 5. Group digits: 1 G 3 4 G. Radio will respond to:12345 (Individual Call).1G34G (Group of up to 100 radios).1234G (Sub-Group of 10 radios).

NOTICE:
This feature is supported in Analog mode only.

3.43.1.5

Decoder Sequence 1

Configures sequence from 1 to 12 or 20 depending on the type of radio.

Configures sequence from 1 to 12 or 20 depending on the type of radio. (for MOTOTRBO Light radios and MOTOTRBO 2.0 Alphanumeric Display Mobile radios with DTP capability only) or 20 (for MOTOTRBO 2.0 radios except for Alphanumeric Display Mobile radios with DTP capability only) tones for this decoder sequence.

NOTICE:
This feature must not be empty.

The user must use "(" character as a prefix and ")" character as a suffix to specify an address variable, a status variable, a radio ID variable, and a single tone variable.

The value of this feature is reset to the original value if the user input is out of range or blank.

The value of this feature is automatically set to an upper case if the user input is lower case.

The value of this feature is automatically corrected if the user input is missing an opening bracket "(" or a closing bracket ")".

A decoder sequence composed of only address or status variable digits is fragile and subject to intervention. Such a definition should be avoided.

This feature is supported in Analog mode only.

3.43.1.6

Group Sequence 1

Configures this feature to enable each decode sequence position to match a group tone.

NOTICE:
This feature is disabled if the Decoder Type feature is set to Silent Interrogate or ACK1/Ringing.

This feature is supported in Analog mode only.

3.43.1.7

Decoder Sequence 2

This feature configures from 1 to 12.

Configures from 1 to 12 (for MOTOTRBO Light radios and MOTOTRBO 2.0 Alphanumeric Display Mobile radios with DTP capability only) or 20 (for MOTOTRBO 2.0 radios except for Alphanumeric Display Mobile radios with DTP capability only) tones for this decoder sequence.

NOTICE:
The user must use "(" character as a prefix and ")" character as a suffix to specify an address variable, a status variable, a radio ID variable, and a single tone variable.

The value of this feature is reset to the original value if the user input is out of range or blank.

The value of this feature is automatically set to an upper case if the user input is lower case.

The value of this feature is automatically corrected if the user input is missing an opening bracket "(" or a closing bracket ")".

A decoder sequence composed of only address or status variable digits is fragile and subject to intervention. Such a definition should be avoided.

This feature is supported in Analog mode only.

3.43.1.8

Group Sequence 2

Configures this feature to enable each decode sequence position to match a group tone.

NOTICE:
This feature is disabled if the Decoder Type feature is set to Silent Interrogate or ACK1/Ringing.

This feature is enabled if only one Decoder Sequence 2 is not empty.

This feature is supported in Analog mode only.

3.43.1.9

Decoder Sequence 3

This feature configures from 1 to 12.

Configures from 1 to 12 (for MOTOTRBO Light radios and MOTOTRBO 2.0 Alphanumeric Display Mobile radios with DTP capability only) or 20 (for MOTOTRBO 2.0 radios except for Alphanumeric Display Mobile radios with DTP capability only) tones for this decoder sequence.

NOTICE:
This feature must not be empty.

The user must use "(" character as a prefix and ")" character as a suffix to specify an address variable, a status variable, a radio ID variable, and a single tone variable.

The value of this feature is reset to the original value if the user input is out of range or blank.

The value of this feature is automatically set to an upper case if the user input is lower case.

The value of this feature is automatically corrected if the user input is missing an opening bracket "(" or a closing bracket ")".

A decoder sequence composed of only address or status variable digits is fragile and subject to intervention. Such a definition should be avoided.

This feature is supported in Analog mode only.

3.43.1.10

Group Sequence 3

Configures this feature to enable each decode sequence position to match a group tone.

NOTICE:
This feature is disabled if the Decoder Type feature is set to Silent Interrogate or ACK1/Ringing.

This feature is enabled if only one Decoder Sequence 3 is not empty.

This feature is supported in Analog mode only.

3.43.1.11

Call Forwarding Acknowledge

Specifies an acknowledge for a 5 Tone decoder when it matches the incoming tones and the radio is in call forwarding mode, if the Call Forward feature is enabled.

The choices are None and all available acknowledges. In the radio, the user may enable or disable the sending of this telegram via a short or long programmable button press (Button Features - Call Forwarding Set/Clear).

NOTICE:
The value of this feature is reset to None if the selected value is deleted or the pasted value does not exist in the available choices.

This feature is disabled if the Decoder Type feature is set to ACK1/Ringing or ACK1/Authorization.

This feature is supported in Analog mode only.

3.43.1.12

Telegram 1st Tone Duration (ms)

Specifies the duration in milliseconds (ms) of the first tone of the received sequence.

If a transmitted sequence has an extended first tone, the receiver's decoders must know what the duration is, otherwise the sequence would be corrupted on decode. The length of the tone would not be of the correct duration for the standard used (e.g. CCIR, EEA, ZVEI).

Range:

Maximum	Minimum	Increment
2550 ms	0 ms	10 ms

NOTICE:
This feature is disabled if set to 0.

This feature is supported in Analog mode only.

3.43.1.13

External Alarm

When enabled, informs the user using the horn or/and lights alarm feature if there is an incoming call alert/private call when the user is not in their vehicle.

NOTICE:
This feature is disabled if the Decoder Type feature is set to Stun, Silent Interrogate, ACK1/Ringing or ACK1/Authorization.

This feature is supported in Analog mode only.

3.43.1.14

Decoder Output Control

Specifies GPIO output for a 5 Tone decoder.

By programming a decoder for output control, the radio can, on successful decoding of a telegram sequence, assert or deassert the output of the GPIO Decode Output Control Line on the accessory connector.

Disabled
On successful decoding of a telegram sequence, no action is done on the output of the GPIO Decode Output Control Line on the accessory connector. .

Assert
On successful decoding of a telegram sequence, the radio asserts the output of the GPIO Decode Output Control Line on the accessory connector.

De-assert
On successful decoding of a telegram sequence, the radio de-asserts the output of the GPIO Decode Output Control Line on the accessory connector.

NOTICE:
An output line (GPIO Pins - 5 Tone Decoder Output Control) is programmed to the Decoder Output Control.

This feature is supported in Analog mode only.

3.43.1.15

Auto Reset Start

A decoder may be programmed such that on receiving and decoding the correct sequence the radio will enter auto-reset, which activates the Auto Reset Timer.

NOTICE:
This feature is disabled if the Decoder Type feature is set to Stun, Clear Down, Silent Interrogate, ACK1/Ringing or ACK1/Authorization.

The None option is not available if the Decoder Type feature is set to Silent Interrogate.

This feature is supported in Analog mode only.

3.43.1.16

Call Answer Timer

After the call answer timer expires due to no radio user operation, the incoming radio address will be stored in the missed call list.

NOTICE:
This feature is disabled if the Decoder Type feature is set to Stun, Unstun, Clear Down, Silent Interrogate, ACK1/Ringing or ACK1/Authorization.

This feature is supported in Analog mode only.

3.43.1.17

Call Back

If enabled, the radio user will be able to talk back to the incoming radio address, otherwise a PTT press during an active call will initiate a new call.

NOTICE:
This feature is disabled if the Decoder Type feature is set to Stun, Clear Down, Silent Interrogate, ACK1/Ringing or ACK1/Authorization.

This feature is supported in Analog mode only.

3.43.1.18

Auto Acknowledge

Selects an auto acknowledge to be sent in a telegram in response to a received and decoded individual call sequence.

The choices are None and all the available acknowledges. No acknowledgement is sent if None is selected. For display model, the name/digits will be displayed on the called radio.

NOTICE:
The value of this feature is reset to None if the selected value is deleted or the pasted value does not exist in the available choices.

This feature is disabled if the Decoder Type feature is set to ACK1/Ringing or ACK1/Authorization.

The None option is not available if the Decoder Type feature is set to Silent Interrogate.

This feature is supported in Analog mode only.

3.43.1.19

Matching Encode Telegram

The specified telegram will be stored into call log list with the decoded radio address, and if the user initiates a call from call log list, the telegram will be encoded.

NOTICE:
The value of this feature is reset to None if the selected value is deleted or the pasted value does not exist in the available choices.

This feature is disabled if the Decoder Type feature is set to Stun, Clear Down, Silent Interrogate, ACK1/Ringing, or ACK1/Authorization.

This feature is supported in Analog mode only.

3.43.1.20

Private Call Tone

Selects the alert tone for private calls on 5 Tone Systems.

The available choices are "None", "Ringer 1" to "Ringer 10", and "Repetitive".

3.43.1.21

Group Call Tone

Allows the user to select the alert tone for group calls 5 Tone Systems.

The available choices are "None", and "Ringer 1" to "Ringer 10".

3.44
Auto Acknowledgement Set

The **Auto Acknowledgement** set allows the user to enable or disable auto acknowledgements in a conventional scan list and a Vote Scan list. After transmission of a telegram, the radio may be programmed to expect various acknowledgements. Up to 16 auto acknowledges can be added.

The following section contains all the supported fields:

3.44.1
General (Auto Acknowledgement)

The **General** section of the Auto Acknowledgement set contains the following fields:

3.44.1.1
Acknowledge Name

Displays the 5 Tone decoder auto acknowledge name.

NOTICE:
This feature is supported in Analog mode only.

3.44.1.2
Telegram (Auto Acknowledges)

Specifies a telegram to encode for a 5 Tone acknowledge configuration.

The choices are all available telegrams.

NOTICE:
The value of this feature is reset to one of the valid choices if the selected value is deleted or the pasted value does not exist in the available choices.

This feature is supported in Analog mode only.

3.44.1.3
Channel Free

If enabled, the radio checks for channel free before sending an acknowledge telegram, otherwise the telegram will be sent anyway.

NOTICE:
This feature is supported in Analog mode only.

3.44.1.4
Sidetone (Auto Acknowledges)

Allows the user to enable or disable the side tone for acknowledge telegram sending for a 5 Tone acknowledge configuration.

When disabled, no side tone indications are given when the radio performs Auto Acknowledgement or Call Forwarding Acknowledge.

NOTICE:
This feature is supported in Analog mode only.

3.44.1.5

Acknowledge Delay (ms)

Specifies the delay duration in milliseconds (ms) before sending the acknowledge telegram for a 5 Tone acknowledge configuration.

Range:

Maximum	Minimum	Increment
6375 ms	0 ms	25 ms

NOTICE:
If the duration is programmed as zero, the radio will reply to the call as fast as possible, but obviously not instantly.

This feature is supported in Analog mode only.

3.44.1.6

Revert Channel Zone

Allows the user to select a revert channel.

3.44.1.7

Revert Channel

Specifies the revert channel for sending the acknowledge telegram for a 5 Tone acknowledge configuration.

The choices are Selected and all available 5 Tone channels.

NOTICE:
The value of this feature is reset to Selected if the selected value is deleted or the pasted value does not exist in the available choices.

This feature is supported in Analog mode only.

3.44.1.8

Revert Channel Zone

Allows the user to select a revert channel.

3.45

Contacts Set

The **Contacts** set contains features for the configuration of calls such as Group Call, Private Call, All Call, Dispatch Call, or PC Call. These calls can be attached to a channel.

3.45.1

Contact

This field allows the user to enter an alias that uniquely identifies the set within a list of Contacts sets.

The range for the alias is up to 16 UCS-2 characters.

NOTICE:
This feature is supported in Analog mode for Display model only.

3.45.2
Five Tone (Contacts)

The **Five Tone** section of the Contacts set contains the following fields:

3.45.2.1
Contact Name (5 Tone Call)

Displays the name of this contact.

NOTICE:
This feature is supported in Analog mode for Display model only.

3.45.2.2
Telegram (5 Tone Call)

Specifies an encode telegram to be used when making a call to this entry.

The choices are all available telegrams. If variable digit positions have been defined in the telegram, the entry will specify the variable digits to be encoded in those positions. For a given telegram the same number of variable digits must always be specified.

The user is able to specify up to three ranges of allowed variable digits. A validation check is made to ensure that the number of variable digits entered is a match for the selected telegram. The address entered by the user will be validated against range(s) that have the same number of digits.

Validation against the allowed variable digit entry is done on keypad entry. If an attempt is made to transmit a telegram where not enough Variable Digits are entered, transmission will fail and the button/keypad error alert is sounded.

NOTICE:
The value of this feature is reset to one of the valid choices if the selected value is deleted or the pasted value does not exist in the available choices.

This feature is supported in Analog mode for Display model only.

3.45.2.3
Address (5 Tone Call)

Configures a radio address from one to eight variables.

The user can the following input to represent a variable:

- a fixed number digit: 0 - 9
- a fixed character digit: "A"-"F"
- a variable radio ID digit: "U1" - "U8"
- a fixed single tone digit: "T1" - "T2"

NOTICE:
The user must use "(" character as a prefix and ")" character as a suffix to specify a radio ID variable and a single tone variable.

The value of this feature is reset to the original value if the user input is out of range or blank.

The value of this feature is automatically set to an upper case if the user input is lower case.

The value of this feature is automatically corrected if the user input is missing an opening bracket "(" or a closing bracket ")".

This feature is supported in Analog mode for Display model only.

3.45.3

MDC (Contacts)

The **MDC** section of the Contacts set contains the following fields:

3.45.3.1

Call Type (MDC Call)

This drop-down list allows the user to choose which call type to use for the MDC phone call.

The available choices are as follows:

- Group Call
- Private Call
- All Call

3.45.3.2

Contact Name (MDC Call)

This displays the name of this contact.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.45.3.3

Call ID (MDC Call)

Sets an ID for an analog call member.

This ID is used to identify and communicate with a target radio or group of radios depending on the call type. There are three call types (Group Call, Private Call and All Call). Call ID for Private Call starts with a hexadecimal digit of 0 to D whereas Call ID for Group Call starts with a hexadecimal digit of E. An All Call has a fixed Call ID of FFFF.

Range:

Maximum	Minimum	Increment
DFFF (Private Call) / EFFF (Group Call)	1 (Private Call) / E000 (Group Call)	1 (Hex)

NOTICE:
The "F" character is allowed and can be used as a wildcard (an all-inclusive digit) in the last three digits of the MDC Call ID. For example, if the Group Call ID is set as E00F, the user is able to communicate with any radios with Group Call IDs between E000 to E00E.

The Call ID of an All Call is not editable.

This feature is used only with the Call Alert and MDC Emergency feature.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.45.3.4

MDC System (MDC Call)

Sets the MDC Signaling System's configuration to be used by the current MDC call.

Any programmed MDC systems in the radio may be selected.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.45.3.5
Revert Channel Zone (MDC Call)

Allows the user to select a revert channel.

3.45.3.6
Revert Channel (MDC Call)

Allows the user to transmit a call on an alternative channel as indicated by the Revert Channel, instead of the channel indicated by the radio's channel selector.

Once the call completes, the radio reverts back to the channel indicated by the radio's channel selector. The Selected option is used when this call member is expected to be transmitted on the channel indicated by the radio's channel selector.

NOTICE:
The RX Only feature must be disabled.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.45.3.7
Strip TPL/DPL (MDC Call)

When enabled (checked), this feature excludes TPL/DPL codes from the MDC transmissions.

NOTICE:
This feature is supported in Analog mode only.

3.45.4
Quik-Call II (Contacts)

The **Quik-Call II** section of the Contacts set contains the following fields:

3.45.4.1
Contact Name (Quik-Call II)

Displays the name of a contact.

NOTICE:
This feature is supported in Analog mode only.

3.45.4.2
Quik-Call II System

Sets the Quik-Call II Signaling System's configuration to be used by the current Quik-Call II call.

Any programmed Quik-Call II system in the radio may be selected.

NOTICE:
This feature is supported in Analog mode only.

3.45.4.3
Revert Channel Zone

Allows the user to select a revert channel.

3.45.4.4

Revert Channel (Quik-Call II Call)

Selects the revert channel on which the Quik-Call II calls are transmitted.

The radio performs this action by automatically switching to the revert channel for the duration of the call, and then switches back to the previously used channel when the call has ended.

NOTICE:
This feature is supported in Analog mode only.

3.45.4.5

Call Format

Selects the QCII UCL Call Format from the available choices: Long Tone, Two Tone.

NOTICE:
This feature is supported in Analog mode only.

3.45.4.6

Tone A Freq (Hz)

Selects the frequency of Tone A to be transmitted for the Quik-Call II two-tone signaling system.

Selecting a value for this field automatically selects a correlating value for the Code field, and vice versa.

Range:

Maximum	Minimum	Increment
3086.0 Hz	288.5 Hz	0.1 Hz

NOTICE:
This feature is supported in Analog mode only.

3.45.4.7

Tone A Code

Selects the code of Tone A to be transmitted for the Quik-Call II two-tone signaling system.

Selecting a value for this field automatically selects a correlating value for the Tone A Freq (Hz) field, and vice versa.

NOTICE:
This feature is supported in Analog mode only.

3.45.4.8

Tone B Freq (Hz)

Selects the frequency of Tone B to be transmitted for the Quik-Call II two-tone signaling system.

Selecting a value for this field automatically selects a correlating value for the Code field, and vice versa.

Range:

Maximum	Minimum	Increment
3086.0 Hz	288.5 Hz	0.1 Hz

NOTICE:
This feature is supported in Analog mode only.

3.45.4.9
Tone B Code

Selects the code of Tone B to be transmitted for the Quik-Call II two-tone signaling system.

Selecting a value for this field automatically selects a correlating value for the Tone B Freq (Hz) field, and vice versa.

NOTICE:
This feature is supported in Analog mode only.

3.45.4.10
Strip TPL/DPL (Quik-Call II Call)

When enabled (checked), this feature excludes TPL/DPL codes from the Quik-Call II transmissions.

NOTICE:
This feature is supported in Analog mode only.

3.45.5
Digital (Contacts)

The **Digital** section of the Contacts set contains the following fields:

3.45.5.1
Call Type (Digital Call)

This drop-down list allows the user to select the type of call in the Digital Unified Call List (UCL).

The available option are as follows:

- Group Call
- Off Air Call Set-Up (OACSU) Private Call
- Full Off Air Call Set-Up (FOACSU) Private Call
- All System Call
- Dispatcher
- PC
- Bluetooth PC Call
- Site All Call (DMR3 Trunking)

- Multi-Site All Call (DMR3 Trunking)

NOTICE:
The Site All Call and Multi-Site All Call support Unified Knob Position (UKP) Call on a DMR3 channel but do not support UKP Call on a Non-DMR3 channel.

The All System Call supports Unified Knob Position (UKP) Call on a DMR3 channel and Non-DMR3 channel.

The Site All Call, Multi-Site All Call and All System Call support Number Key Quick Contact Access.

The Site All Call, Multi-Site All Call and All System Call do not support One Touch Call, Received Talkgroup list and Telemetry.

3.45.5.2
Contact Name (Digital Call)

This displays the name of this contact.

NOTICE:
This feature is supported in Digital mode only.

3.45.5.3
Call ID (Digital Call)

Sets an ID for a digital call member.

This ID is used to identify and communicate with a target radio or group of radios depending on the call type. There are seven call types (Multi-Site All Call, Group Call, Private Call, All Call, Dispatch Call, PC Call, and Unaddressed Call). The meaning of the call type's ID is explained as follows.

Multi-Site All Call
This call enables the user to make call to all sites. The ID is 16777056 to 16777183 and 16777214.

Group Call
This is the ID of the Group that the user wishes to subscribe to.

Private Call
This is the Radio ID of the target radio.

All Call
This has a fixed ID of 16777215 (value is not editable).

Dispatch Call
This call enables an individual radio to send a text message to a PC-based Dispatch client on the fixed network. The ID of the dispatch call must match the target dispatcher's ID programmed in the text message server.

PC Call
This call enables an individual radio to send a text message to a personal computer (PC) through a radio connected to the PC. The ID of this call must match the Radio ID of the radio connected to the PC.

Unaddressed Call
This call enables the user to deliberately terminate a call. Unlike a normal group call, the radio does not show the call ID in the **call active** screen. Instead, the radio displays `Unaddressed Call` for all MOTOTRBO 2.0 and MOTOTRBO Light display models with the exception of the SL Series commercial radios. The SL Series commercial radio displays `UNAD` because of limited LED display space.

The ID that is chosen for a particular call type should be consistent with the ID of the target radio's call type.

Range:

Maximum	Minimum	Increment
16776415	1	1

NOTICE:
This feature is supported in Digital mode only.

3.45.5.4 OVCM TX (Digital Call)

This feature allows you to initiate an open voice channel mode (OVCM) call. The feature is cleared by default.

An OVCM call allows radios that are not configured to receive a group call or that are not the source or target of an individual call to participate in the call. To support the initiation of an OVCM call, all group and individual contacts have a configurable enable/disable OVCM TX (transmit) option where the default is disabled. When OVCM TX is enabled for a group or individual contact, the Subscriber Unit indicates that the call is an OVCM call.

NOTICE: This feature applies only to the Private Call and Group Call call types. For further information, see Call ID (Digital Call) on page 713.

3.45.5.5 OVCM RX (Digital Call)

This feature allows the user to receive open voice channel mode (OVCM) calls on the personality.

To support participating in an OVCM call when not specifically configured to participate in the call, the Subscriber Unit has a configurable enable/disable OVCM RX (receive) option at the personality level where the default is disabled.

NOTICE: When not specifically configured to RX, the target talk group ID is not in the personality RX group list or personality scan list for a group call. For an individual call, the target Subscriber Unit ID is different than the ID of the Subscriber Unit.A radio that is OVCM RX enabled unmutes to receive any call that indicates OVCM. When a radio is involved in an OVCM group call, all responses during the call indicate that the call is OVCM, whether due to target ID or OVCM indication.

3.45.5.6 Route Type (Digital Call)

Allow user to configure where the data message, including text message or telemetry, received in radio is routed to.

This feature is configured in the radio from which the data message transmits out. The data message will be routed to different target after peer radio received it.

Regular
The data message is to routed to the receiving radio itself.

Option Board
The data message is to routed to the option board device.

Non-IP Peripheral
The data message is to routed to the Non-IP peripheral device.

NOTICE:
DMR Standard Text Message Type cannot be routed to Non-IP Peripheral or Option Board. Refer to Text Message Type for more information.

Non-IP Peripheral is not applicable for SL Series Radio.

3.45.5.7
Connection Type (Digital Call)

This field allows the user to configure the connection type for a PC call in a digital system.

The available options are as follows:

- **USB**
- **Bluetooth**

NOTICE:
The **Bluetooth** option is available only when the Bluetooth feature is enabled for the radio.

This feature is supported in Digital mode only.

This field is only visible when Call Type is set to **PC**.

3.45.5.8
Call Receive Tone (Digital Call)

This alert tone sounds on the receiving radio prior to unmuting during a Private Call, Group Call, or All System Call.

This is to notify the user that the radio is unmuting. This feature is set on a per-call basis.

NOTICE:
The Disable All Tones feature must be disabled.

This feature is supported in Digital mode only.

3.45.5.9
Ring Style (Digital Call)

Configures the ring tone for a received Private Call, Dispatch Call, or PC Call.

The choices are No Style, Ringer 1 to Ringer 10. If set to No Style, the default tone is sounded.

NOTICE:
This feature is supported in Digital mode only.

3.45.5.10
Text Message Alert Tone (Digital Call)

This alert tone sounds when a text message is received from a specific contact in the Contacts list.

Momentary
The radio plays the alert tone once. The message alert screen is dismissed after 60 seconds.

Repetitive

The radio starts the Text Message Alert Tone Duration timer and plays the alert tone repeatedly until the user reads the message, the timer expires, the radio enters into the test mode, or the radio is turned off. The message alert screen is still dismissed after 60 seconds.

NOTICE:
This feature is supported in Digital mode only.

3.45.6
Capacity Plus (Contacts)

The **Capacity Plus** section of the Contacts set contains the following fields:

3.45.6.1
Call Type (Capacity Plus)

This drop-down list allows the user to choose which call type to use for the Capacity Plus–Single-Site phone call.

The available choices are as follows:

- Group Call
- Private Call
- All Call
- Dispatch
- PC

3.45.6.2
Contact Name (Capacity Plus)

This displays the name of this contact.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.45.6.3
Call ID (Capacity Plus)

This feature specifies the Capacity Plus–Single-Site call's group ID, private ID, or all system ID depending on the call type.

For Dispatch Call, this feature is only applicable to text messages, not voice calls. For more information about each call types, refer to Call Types. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
254	1	1

Range:

Maximum	Minimum	Increment
65535	1	1

Range:

Maximum	Minimum	Increment
255	255	0

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.45.6.4

Route Type (Capacity Plus)

Allows the user to configure where the data message, including text message or telemetry, received in radio is routed to.

This feature is configured in the radio from which the data message transmits out. The data message will be routed to different target after peer radio received it.

Regular
The data message is to routed to the receiving radio itself.

Option Board
The data message is to routed to the option board device.

Non-IP Peripheral
The data message is to routed to the Non-IP peripheral device.

NOTICE:
DMR Standard Text Message Type cannot be routed to Non-IP Peripheral or Option Board. Refer to Text Message Type for more information.

Non-IP Peripheral is not applicable for SL Series Radio.

3.45.6.5

Connection Type (Capacity Plus)

This field allows the user to configure the connection type for a PC call in a Capacity Plus system.

The available options are as follows:

- **USB**
- **Bluetooth**

NOTICE:
The **Bluetooth** option is available only when the Bluetooth feature is enabled for the radio.

This field is only visible when Call Type is set to **PC**.

3.45.6.6

Call Receive Tone (Capacity Plus)

This alert tone sounds on the receiving radio prior to unmuting during a Private Call, Group Call, or All System Call.

This is to notify the user that the radio is unmuting. This feature is set on a per-call basis.

NOTICE:
The Disable All Tones feature must be disabled.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.45.6.7

Ring Style (Capacity Plus)

Configures the ring tone for a received Private Call, Dispatch Call, or PC Call.

The choices are No Style, Ringer 1 to Ringer 10. If set to No Style, the default tone is sounded.

NOTICE: This feature is supported in Digital mode only.

3.45.6.8
Text Message Alert Tone (Capacity Plus)

This alert tone sounds when a text message is received from a specific contact in the Contacts list.

Momentary
The radio plays the alert tone once. The message alert screen is dismissed after 60 seconds.

Repetitive
The radio starts the Text Message Alert Tone Duration timer and plays the alert tone repeatedly until the user reads the message, the timer expires, the radio enters into the test mode, or the radio is turned off. The message alert screen is still dismissed after 60 seconds.

NOTICE:
This feature is supported in Digital mode only.

3.45.7
Phone (Contacts)

The **Phone** section of the Contacts set contains the following fields:

3.45.7.1
Name (Phone Call)

Configures the phone call alias in the Unicode format for each entry in the Phone Call list to identify the phone call.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Digital mode and 3600 Trunking capable radios.

3.45.7.2
Number

Allows the user to enter a phone number.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Digital mode and 3600 Trunking capable radios only.

3.46
Digital RX Group List Set

The **Digital RX Group List** set contains features for the user to create and manage lists of Digital Group Calls. The RX Group List specifies which Groups the radio is a member of (or subscribed to). When this list is attached to a digital channel, the user can listen to any Group in this list when there is any activity on it and talk back within the Group Call hang time.

The following section contains all the supported fields:

3.46.1
General (Digital RX Group List)

The **General** section of the Digital RX Group List set contains the following fields:

3.46.1.1
Digital Name

This field allows the user to enter an alias that uniquely identifies the set within a list of Digital RX Group List sets.

The range for the alias is up to 16 UCS-2 characters.

NOTICE:
This feature is supported in Digital mode only.

3.46.1.2
Available and Members

Allows the user to select from a list of **Available** Digital Groups List Items and add them to the list of **Members**.

See Adding Digital Groups on page 719 and Removing Digital Groups on page 719.

When the channel selected has this list attached, if the radio receives a group call that is addressed to any one of its subscribed groups, the radio participates in that group call (i.e., The radio unmutes for incoming transmissions and talks back when the PTT is pressed).

When using Capacity Max, RM supports 17 members; 1 member is a special member called "Selected".

NOTICE:
This feature is supported in Digital mode only.

3.46.1.3
Adding Digital Groups

Adds the selected Digital Group(s) from the Available list into the Members list.

A maximum of 16 Digital Groups may be added to the Members list.

1 Select a Digital Group to be added from the Available list.

2 Click the Add button.

NOTICE:
This feature is disabled if no Digital Group is selected in the Available list or if the list is empty.

This feature is supported in Digital mode only.

3.46.1.4
Removing Digital Groups

Removes the selected Digital Group(s) from the Members list.

1 Select the Digital Group to be removed from the Members list.

2 Click the Remove button.

NOTICE:
This feature is disabled if no Digital Group is selected in the Members list or if the list is empty.

This feature is supported in Digital mode only.

3.46.1.5
Talkback

When Capacity Max Advantage is used, RM allows the user to configure Talkback. Talkback is applicable to the Capacity Max channel.

When the radio is in an ongoing talkgroup call, and if the user presses the PTT button, if Talkback is disabled and the ongoing call is not a selected call, then a new call shall be launched. If Talkback is enabled, then the user can talkback on the ongoing group call.

3.46.1.6
Set/Clear Priority 1

Toggles the Priority 1 scanning status of the highlighted conventional channel/trunking personality in the Members list.

When the Priority 1 status is set to the highlighted channel/personality, the Priority 1 status on another channel/personality (if any) is cleared. During scan, 50% of a radio's scans are on the Priority 1 member. If a Priority 2 member exists, scans for the Priority 1 member are reduced from 50% to 25%. Even after landing on a non-priority or Priority 2 member, the radio continues to periodically scan for transmission activity on a Priority 1 member. If the radio discovers activity on the Priority 1 member, it drops the current transmission, and unmutes to the Priority 1 member.

In the TGSA view, enable the Priority Monitor button. When the button is enabled, the Talkgroup is prioritized.

To set the priority:

1 Select a channel/personality from the Members list.

2 Click on the **Set/Clear Priority 1** button.

NOTICE: This button is only available for Capacity Max system.

3.46.1.7
Set/Clear Priority 1

Toggles the Priority 1 scanning status of the highlighted conventional channel/trunking personality in the Members list.

When the Priority 1 status is set to the highlighted channel/personality, the Priority 1 status on another channel/personality (if any) is cleared. During scan, 50% of a radio's scans are on the Priority 1 member. If a Priority 2 member exists, scans for the Priority 1 member are reduced from 50% to 25%. Even after landing on a non-priority or Priority 2 member, the radio continues to periodically scan for transmission activity on a Priority 1 member. If the radio discovers activity on the Priority 1 member, it drops the current transmission, and unmutes to the Priority 1 member.

To set the priority:

1 Select a channel/personality from the **Members** list.

2 Click on the **Set/Clear Priority 1** button.

NOTICE:
This feature is disabled if no channel/personality is selected in the Members list.

It is not recommended to assign any 5 Tone decodes to a priority channel as the decodes will most likely be missed because of the period between priority channel checks.

This feature is applicable to MOTOTRBO Conventional radios only and 3600 Trunking capable radios in Trunked mode only.

3.46.1.8
Set/Clear Priority 2

Toggles the Priority 2 scanning status of the highlighted conventional channel/trunking personality in the Members list.

When the Priority 2 status is set to the highlighted channel/personality, the Priority 2 status on another channel/personality (if any) is cleared. During scan, 25% of a radio's scans are on the Priority 2 member. If a Priority 2 member exists, scans for the Priority 1 member are reduced from 50% to 25%. Even after landing on a non-priority channel, the radio continues to periodically scan for transmission activity on a Priority 2 member. If the radio discovers activity on the Priority 2 member, it drops the current transmission, and unmutes to the Priority 2 member. Activity on a Priority 2 member will be dropped in the event of any valid activity on a Priority 1 member.

In the TGSA view, enable the Priority Monitor button. When the button is enabled, the Talkgroup is prioritized.

To set the priority:

1 Select a channel/personality from the **Members** list.

2 Click on the **Set/Clear Priority 2** button.

NOTICE: This button is only available for Capacity Max system.

3.46.1.9 Set/Clear Priority 2

Toggles the Priority 2 scanning status of the highlighted conventional channel/trunking personality in the Members list.

When the Priority 2 status is set to the highlighted channel/personality, the Priority 2 status on another channel/personality (if any) is cleared. During scan, 25% of a radio's scans are on the Priority 2 member. If a Priority 2 member exists, scans for the Priority 1 member are reduced from 50% to 25%. Even after landing on a non-priority channel, the radio continues to periodically scan for transmission activity on a Priority 2 member. If the radio discovers activity on the Priority 2 member, it drops the current transmission, and unmutes to the Priority 2 member. Activity on a Priority 2 member will be dropped in the event of any valid activity on a Priority 1 member.

To set the priority:

1 Select a channel/personality from the **Members** list.

2 Click on the **Set/Clear Priority 2** button.

NOTICE:
This feature is disabled if no channel/personality is selected in the Members list.

This feature is enabled when there is a Priority 1 member in the Members list.

It is not recommended to assign any 5 Tone decodes to a priority channel as the decodes will most likely be missed because of the period between priority channel checks.

This feature is applicable to MOTOTRBO Conventional radios only and 3600 Trunking capable radios in Trunked mode only.

3.46.1.10 Set/Clear Affiliation

Allows the user to set or clear the affiliation on the calls.

3.46.1.11 Set/Clear Permanent Digital Group

This feature allows the user to set or clear the Permanent Digital Group in the Members List. When this feature is set, and there is a permanent group in the Members List, the radio can perform the activity that is targeted to the Permanent Digital Group.

For example, if the Permanent Group is an Affiliation member, the radio can perform Affiliation to the Permanent Group. If the Permanent Group is a Priority member, the radio can mute lower Priority member and unmute higher Priority member.

NOTICE:

- RM only allows users to configure Priority2 Talkgroup as Permanent if the Priority1 Talkgroup has been set as Permanent.
- Ensure that the Scan is Off for this feature to function.
- Radio users are not allowed to add, edit, or remove Permanent Digital Group.
- This feature is only applicable for Capacity Max system.

3.47
Capacity Plus RX Group List Set

The **Capacity Plus RX Group List** set is used to define members from a list of available Capacity Plus Groups that the subscriber radio will use to make Group Calls when on the site.

The following section contains all the supported fields:

3.47.1
General (Capacity Plus RX Group List)

The **General** section of the Capacity Plus RX Group List set contains the following fields:

3.47.1.1
Capacity Plus Name

This field allows the user to enter an alias that uniquely identifies the set within a list of Capacity Plus RX Group List sets.

The range for the alias is up to 16 UCS-2 characters.

NOTICE: This feature is supported in Digital mode only.

3.47.1.2
Available and Members

Allows the user to select from a list of **Available** Capacity Plus RX Group List and add them to the list of **Members**.

See Add on page 722 and Remove on page 723.

NOTICE: This feature is supported in Digital mode only.

3.47.1.3
Add

Adds group(s) from the Available list into the Members list.

Group(s) added to the Members list will be removed from the Available list.

NOTICE:
This feature is disabled if no channel is selected in the Available list or if the list is empty.

This feature is supported in Digital mode only.

3.47.1.4
Remove

Removes group(s) from the Members list to the Available list.

NOTICE:
This feature is disabled if no channel is selected in the Members list or if the list is empty.

This feature is supported in Digital mode only.

3.48
Flexible Capacity Plus RX Group List Set

The **Flexible Capacity Plus RX Group List** set is a customizable Capacity Plus RX Group list used to define members from a list of available Flexible Capacity Plus Groups that the subscriber radio uses to make Group Calls when on the site.

The following section contains all the supported fields:

3.48.1
General (Flexible Capacity Plus RX Group List)

The **General** section of the Flexible Capacity Plus RX Group List set contains the following fields:

3.48.1.1
Flexible Capacity Plus Name

This field allows the user to enter an alias that uniquely identifies the set within a list of Flexible Capacity Plus RX Group List sets.

The range for the alias is up to 16 UCS-2 characters.

NOTICE: This feature is supported in Digital mode only.

3.48.1.2
Available and Members

Allows the user to select from a list of **Available** Flexible Capacity Plus RX Group List and add them to the list of **Members**.

See Add on page 723 and Remove on page 724.

NOTICE:
This feature is supported in Digital mode only.

Only Capacity Plus group calls must be part of the Available List.

This feature is enabled if the Capacity Plus–Single-Site or Capacity Plus–Multi-Site feature is enabled.

3.48.1.3
Add

Adds group(s) from the Available list into the Members list.

Group(s) added to the Members list will be removed from the Available list.

NOTICE:
This feature is disabled if no Talk Group is selected in the Available or Members list, or the list is empty.

If the user attempts to add more talkgroups than allowed, an error message will be prompted.

This feature shall be shown when the Capacity Plus–Single-Site or Capacity Plus–Multi-Site feature is enabled.

This feature is supported in Digital mode only.

3.48.1.4
Remove

Removes the highlighted selection from the Members List and adds them back into the Available List.

NOTICE:
This button is disabled, if no selection is highlighted in the selected list or the list is empty.

This feature is disabled if Available or Members are not visible (if the control is removed through custom view).

This feature enabled if the user enabled the Capacity Plus–Single-Site or Capacity Plus–Multi-Site feature.

This feature is supported in Digital mode only.

3.49
Capacity Max Systems Set

The **Capacity Max Systems** set contains features that are used to configure security, timers, Capacity Max sites, channel plan, adjacent sites, and site announcements.

The following sections contain all the supported fields:

3.49.1
General (Capacity Max Systems)

The **General** section of the Capacity Max Systems set contains the following fields:

3.49.1.1
System Name

This text field allows the user to provide a name for the system.

3.49.1.2
System Type

This feature defines the Fixed Network Element (FNE) type or System Type as the operation mode for a radio or system in a Capacity Max system.

The available options are as follows:

Capacity Max Open Radio
This system type applies to the radio only and not the system. The radio transmits and receives only standard Digital Mobile Radio (DMR) Protocol Data Unit (PDU). The user uses this mode when the radio is on a DMR3 system of another manufacturer.

Capacity Max Open System

This system type uses the DMR trunking protocol and therefore supports both MSI and non-MSI radios. In this mode, a Capacity Max system provides more capacity when working with MSI radios.

Capacity Max Advantage

This system type provides more capacity than **Capacity Max Open System**.

NOTICE: All the capacity enhancements of Open System with MSI radios are also available in Capacity Max Advantage.

3.49.1.3 Phone Call Setup Method

This fields allows the user to select the call setup method for telephone patch calls in a Capacity Max System.

The following three types of half duplex telephone patch calls are supported:

- Individual phone call initiated from a radio user to a landline phone user
- Individual phone call initiated from a landline phone user to a radio user
- Talkgroup phone call initiated from a landline phone user to a group of radio users

The following selections are supported:

- **Dialing digits on Payload Channel (DTMR)**
- **Dialing Digits on Control Channel (DMR3)**

3.49.1.4 Network Model

This drop-down list allows the user to select the Network Model.

The available options are Tiny, Small, Large, and Huge, with Small as the default value. Each Network Model option sets a range for the Network ID.

In the DMR trunking protocol, the Network Model and Network ID are used together to make up a system ID. As the size of the network increases, (Tiny, Small, Large, or Huge) the range of the network ID decreases. The combination of the Network Model and Network ID should not match that of a neighboring system.

3.49.1.5 Network ID

The user identifies the Capacity Max system by a Network ID.

The paired Network ID and Network Model of the Capacity Max system is unique among the Capacity Max compatible systems in the same geographical area. The scope of the Network ID includes all the entities and radios of the Capacity Max system. This field allows the user to select the Network ID.

Range	
Maximum	511
Minimum	0
Increment	1
Default	0

Network Model	Network ID Range

Tiny	0–511
Small	0–127
Large	0–15
Huge	0–3

NOTICE: The value range of Network ID depends on Network Model.

3.49.1.6
Enhanced Channel Access

This feature displays **Yes** or **No** to indicate whether the Enhanced Channel Access feature is enabled or disabled.

When this feature is enabled, it improves the reliability of transmissions by minimizing Over The Air (OTA) collisions when two or more radios initiate a call simultaneously. For effective operation, this feature must be enabled on all the radios accessing the channel. This feature is a channel-wide feature.

NOTICE:

- This feature depends on System Type.
- When System Type is set to **Capacity Max Open Radio**, this feature is non-configurable and disabled.
- When System Type is set to **Capacity Max Open System** or **Capacity Max Advantage**, this feature is configurable and enabled by default.

3.49.1.7
Text Message Type

This drop-down list allows the user to select the type of text message when creating a new or sending a text message.

The available options are as follows:

DMR Tier 3 IOP
Sent on the control channel; while other protocols are sent on the trunked channels. Sending data on the control channel is not recommended since it may degrade performance and capacity.

DMR Standard
The DMR Standard protocol is recommended in most cases.

Proprietary
MSI proprietary TMS.

When replying or resending a Proprietary or DMR Standard text message, the text message type follows the original message. When replying or resending a DMR Tier 3 IOP text message, the text message type remains as DMR Tier 3 IOP.

NOTICE: DMR Tier 3 IOP is not supported via the MNIS Data Gateway.

3.49.1.8
Location Area Length (bits)

This field allows the user to set the Capacity Max Location Area.

A location area is a group of sites where the radio is not required to register explicitly while roaming among the sites in the group. In Capacity Max, a location area only contains one site, and therefore is not configurable if the System Type is **Capacity Max Open System**, or **Capacity Max Advantage**. If a radio is configured with a System Type of **Capacity Max Open Radio** and therefore operating on another manufacturer system, then a location area mask length can be configured. The value of the location area mask length is limited by the configured Network Model.

Range	
Maximum	10
Minimum	0
Increment	1
Default	5

NOTICE:

- The DMR Location Area depends on FNE Type and Network Model.
- When System Type on page 724 is **Capacity Max Open Radio**, the DMR Location Area is configurable with ranges of 0–3 for Tiny Network Model, 0–5 for Small Network Model, 0–8 for Large Network Model, and 0–10 for Huge Network Model.
- When System Type is **Capacity Max Open System** or **Capacity Max Advantage**, the DMR Location Area is non-configurable and is set by default to 3 for Tiny Network Model, 5 for Small Network Model, 8 for Large Network Model, and 10 for Huge Network Model.

3.49.1.9
Comprehensive Hunting

This check box allows the user to use the comprehensive hunting feature.

While in the control channel acquisition mode, if the **Comprehensive Hunt Enabled** field is set to TRUE, the subscriber starts comprehensive hunting after the completing short and long hunting without successfully qualifying a control channel.

If Comprehensive Hunting is enabled and a radio cannot find a suitable control channel at adjacent and non-adjacent sites, the radio can optionally start comprehensive hunting. Comprehensive hunting looks through all the frequencies which can be converted into a channel ID using the configured fixed channel plan of the radio. It uses the channel IDs that are convertible to an absolute frequency through the fixed channel plan mapping. Comprehensive hunting is configurable only when the radio is configured with System Type on page 724 set to **Capacity Max Open System** or **Capacity Max Advantage**.

3.49.1.10
Acceptable RSSI Threshold (dBm)

This threshold determines the coverage area where the strength of the signal received by a radio is sufficient to establish and maintain communication with the base repeater, either for a control channel or for a trunked channel.

The subscriber measures the RSSI of the control channel or failsoft frequency before qualifying it. The subscriber continues the qualification only if the measured RSSI is greater or equals to the Acceptable RSSI Threshold.

Range	
Maximum	0

Minimum	-124
Increment	1
Default	-105

3.49.1.11
Individual Voice Call Type

This drop-down list allows the user to select Individual Voice Call Type.

The available options are Off Air Call Setup (OACSU) and Full Off Air Call Setup (FOACSU).

NOTICE: All radios in the system must utilize the same call type.

Option	Functionality
OACSU	An individual call is set up after checking the availability of the destination radio.
FOACSU	An individual call is set up after checking the availability of the destination radio and the willingness of the radio user to participate in the call.

NOTICE:
This feature is system wide and all the repeaters in the system have the same configuration.

3.49.1.12
Call Queue Enable

When enabled, the trunking controller places the call in the queue when no resources are available to grant a call request.

When a resource becomes available, the call is removed from the queue and granted the resource. If a system is designed for proper channel loading, on average, a low percentage (3%) of calls should be placed in the queue. The call queuing can be disabled if queuing is causing unacceptable delays.

When disabled, the call is denied when there are no resources available to grant a call request.

3.49.1.13
Max Infrastructure Voice Interrupt Attempts

This field determines the number of times the infrastructure attempts a voice interrupt command.

The default value is highly recommended.

Range	
Maximum	5
Minimum	1
Increment	1

3.49.1.14
Maximum Preemption Interrupt Attempts

This field determines the number of attempts the infrastructure will try to preempt an ongoing call.

The default value is highly recommended.

Range	
Maximum	10
Minimum	1
Increment	1

3.49.1.15

Primary Trunking Controller IP

This is the IP address of the Primary Trunking Controller.

The Capacity Max System Server (CMSS), where the Primary Trunking Controller resides on, is configured with a base IP address (a subnet) in the CMSS Configuration within RM. The IP addresses of all the virtual appliances within the CMSS maintain a fixed offset from its base IP address. The Trunking Controller is +1 from the base IP address configured in the CMSS. The CMSS comes pre-configured as `172.20.36.0`, if not changed, the Trunking Controller IP is `172.20.36.1`.

NOTICE:
This field does not set the IP address used by the Primary Trunking Controller. It is used by other devices in the system to communicate with the Primary Trunking Controller.

The range is `0.0.0.0` to `255.255.255.255`

3.49.1.16

Primary Trunking Controller UDP Port

This is the User Datagram Protocol (UDP) port used by the primary trunking controller.

NOTICE: The default value should be used unless a conflict is encountered

The range is 0–65535. The default value is 50 000.

3.49.1.17

Call Monitor Application 1 IP

This field contains the IP address of Call Monitoring Application 1. The Capacity Max infrastructure sends call information to this IP address for Call Monitoring Application 1.

The system supports three active Call Monitoring Applications, but only one is manually configurable. The system automatically selects up to two System Advisor servers as active and sends them call monitoring data. The System Advisor server IP and Port are NOT entered as Call Monitoring Applications here. If using a 3rd party call monitoring application, then its IP address must be specified.

Range:

Maximum	Minimum
255.255.255.255	0.0.0.0

3.49.1.18

Call Monitor Application 1 UDP Port

This field contains the UDP Port for Call Monitoring Application 1. The Capacity Max infrastructure sends call information to this port for Call Monitoring Application 1.

If using a third- party call monitoring application, then its UDP port must be specified.

Range:

Maximum	Minimum	Increment
65535	0	1

3.49.1.19

Call Monitor Application 2 IP

The system supports three active Call Monitoring Applications, but only one is manually configurable. Call Monitoring Application 2-3 are no longer configurable.

The system automatically selects up to two System Advisor servers as active and sends them call monitoring data. These fields remain for those configuring Capacity Max 2.6 systems. If configuring a Capacity Max 2.6 system the IP address and UDP port of the System Advisor Servers are entered as Call Monitoring Application 1-2, and then a 3rd party call monitoring application as Call Monitoring Application 3.

3.49.1.20

Call Monitor Application 2 UDP Port

The system supports three active Call Monitoring Applications, but only one is manually configurable. Call Monitoring Application 2-3 are no longer configurable.

The system automatically selects up to two System Advisor servers as active and sends them call monitoring data. These fields remain for those configuring Capacity Max 2.6 systems. If configuring a Capacity Max 2.6 system the IP address and UDP port of the System Advisor Servers are entered as Call Monitoring Application 1-2, and then a 3rd party call monitoring application as Call Monitoring Application 3.

3.49.1.21

Call Monitor Application 3 IP

The system supports three active Call Monitoring Applications, but only one is manually configurable. Call Monitoring Application 2-3 are no longer configurable.

The system automatically selects up to two System Advisor servers as active and sends them call monitoring data. These fields remain for those configuring Capacity Max 2.6 systems. If configuring a Capacity Max 2.6 system the IP address and UDP port of the System Advisor Servers are entered as Call Monitoring Application 1-2, and then a 3rd party call monitoring application as Call Monitoring Application 3.

3.49.1.22

Call Monitor Application 3 UDP Port

The system supports three active Call Monitoring Applications, but only one is manually configurable. Call Monitoring Application 2-3 are no longer configurable.

The system automatically selects up to two System Advisor servers as active and sends them call monitoring data. These fields remain for those configuring Capacity Max 2.6 systems. If configuring a Capacity Max 2.6 system the IP address and UDP port of the System Advisor Servers are entered as Call Monitoring Application 1-2, and then a 3rd party call monitoring application as Call Monitoring Application 3.

3.49.1.23

Voice Interrupt Support

This check box allows the user to enable or disable the Voice Interrupt Support on Capacity Max System Server (CMSS).

Capacity Max supports the ability to interrupt a transmitting radio. The ability to interrupt can be configured per radio within the Subscriber Access Control (SAC). This check box disables the feature system wide without the need to individually set each radio within the SAC. This is useful in scenarios when there is a need to temporarily disable all voice interrupt capability, and then quickly restore it to the same radios that were previously enabled.

This feature is enabled by default.

3.49.1.24

Telephone Support

This check box allows the user to enable or disable the telephone support on Capacity Max System Server (CMSS).

Capacity Max supports the ability for radios to initiate calls to phone users. The ability to initiate phone calls can be configured per radio within the Subscriber Access Control (SAC). This check box disables the feature system wide without the need to individually set each radio within the SAC. This is useful in scenarios when there is a need to temporarily disable all radio's capability to initiate telephone calls, and then quickly restore it to the same radios that were previously enabled. Since phone systems go through the trunking controller, inbound calls are also blocked.

This feature is enabled by default.

3.49.1.25

System Upgrade Complete

Enabling this checkbox allows the trunk controller to be notified whether or not all infrastructure devices (Repeater, Trunking Controller, System Advisor, VRC Gateway, Data Gateway) are working on the same version. Radios may be on a different version.

3.49.1.26

Talkgroup Subscription

This check box allows the user to enable the radio to perform a Talkgroup (TG) Subscription during registration within a Capacity Max system.

When disabled, the radio does not subscribe or affiliate to any TG or TG list after the following:

- Registration and re-registeration
- Mass registration request
- Emergency call
- Scan on/off
- Mode change in the same system even after a transmit TG or receive TG list change

Talkgroups from the receive TG list are disabled from user subscription.

NOTICE: TG Subscription is only accessible when System Type on page 724 is set to **Capacity Max Open Radio**.

3.49.1.27

DGNA Talkgroup List Support

This field allows the system operator to determine whether or not a radio uses the channel's talkgroup list, when the channel holds a Dynamic Group Number Assingment (DGNA) talkgroup.

When enabled and the radio receives the `Add DGNA talkgroup` request, the DGNA channel uses the original talkgroup plus the DGNA talkgroup. When disabled, the Scan List of the DGNA channel becomes the DGNA talkgroup only.

NOTICE: The maximum number of affiliated talkgroups in the talkgroup list is seven. If adding DGNA talkgroup results in having eight affiliated talkgroups in total, the radio removes the last item in the non-DGNA affiliated talkgroups list.

3.49.1.28

Seamless Call Handover

This field allows the user to enable or disable the enhanced call handover feature.

When enabled, the radio supports Tx handover for regular telephone calls as well as talkgroup calls and individual calls. When this feature is disabled, the radio supports only the legacy talkgroup Rx or Call hangtime handover to the payload channel.

NOTICE: Seamless Call Handover is not available in Open Radio mode.

3.49.2

Data Revert (Capacity Max Systems)

The **Data Revert** section of the Capacity Max Systems set contains the following fields:

3.49.2.1

Enhanced GNSS

The field enables Enhanced GNSS Revert channels and allows the subscriber the use the windowed GNSS revert to update its location in a Capacity Max system.

NOTICE: This fields is always set to **Yes** and cannot be modified.

3.49.2.2

Enhanced GNSS Window Size

This drop-down list allows the user to select the window size of the GNSS transmission.

If Enhanced GNSS is enabled, then the GNSS window size must be configured. The size of the window (the duration of the scheduled time window) is a function of the amount of data requested by the location server.

Range	
Maximum	10
Minimum	1
Increment	1

3.49.2.3
GNSS/Data on Revert Channel only

When enabled, supported data is only sent on data revert channels.

When disabled, and no data revert channels is configured at a site, the supported data is sent on the trunked channels.

The types of supported data on revert channel are GNSS and Indoor Location.

3.49.2.4
Data Revert Admit Criteria

Determines when data is allowed to be transmitted on a Data Revert Channel.

This is used to prevent a radio from transmitting on channels that are already being used. If the radio has different transmit and receive frequencies, only the receive frequency is monitored for activity. If no activity is found on the receive frequency, the radio allows the user to transmit on the transmit frequency even if it is being used. This is a channel-wide feature.

Channel Free
The radio will check for an idle channel prior to allowing a transmission. This option is also referred to as "Polite to All" channel access.

Color Code Free
The radio will check if the specified Color Code is not in use prior to allowing transmission (except for Group Calls that are already in progress). This option is also referred to as "Polite to Own Digital System" channel access (for Digital channels only).

NOTICE: Color Code Free is almost always recommended.

3.49.3
Authentication (Capacity Max Systems)

The **Authentication** section of the Capacity Max Systems set contains the following fields:

3.49.3.1
Authentication of Radios by System

This check box allows the user to enable (checked) or disable radio authentication during registration at a system level.

NOTICE: A valid Master Key is required if this field is enabled.

3.49.3.2
Authentication of System by a Radio for Stun/Revive

This check box allows the user to enable or disable the Stun/Revive Authentication feature for the radio and network in the Capacity Max System. The Stun mechanism denies the radio access to certain services.

When the Stun mechanism inhibits the radio, the user cannot request or receive any self-initiated service on the system that performs the Stun procedure. For hunting, registration, and authentication, the stun/revive activities remain active and the radio continues to send location updates after getting stunned.

When the user enables the Stun/Revive authentication feature, upon receiving the Stun/Revive command, the radio authenticates the network by sending an Authentication Challenge, receiving a

Challenge Response, and validating the response before sending a final acknowledgment response to the network.

When the user disables the Stun/Revive authentication feature, upon receiving the Stun/Revive command, the radio does not authenticate the network before sending a response to the network. If the radio responds with an Authentication Challenge, the stun/revive procedure fails.

NOTICE:

- A valid Master Key is required if this field is enabled.
- When System Type on page 724 is set to **Capacity Max Open Radio**, this feature is non-configurable and disabled.
- When System Type is set to **Capacity Max Open System** or **Capacity Max Advantage**, this feature is configurable.

3.49.3.3
Authentication Master Key

The Master Key is utilized for radio authentication during registration and for stun/revive authentication.

If Authentication of Radios by System on page 733 or Authentication of System by a Radio for Stun/Revive on page 733 are enabled, a master key must be provided.

3.49.3.4
Authentication of System for DGNA (Dynamic Group Number Assignment)

This field allows the radio to authenticate the Capacity Max system before applying the Dynamic Group Number Assignment (DGNA) commands.

If enabled, the radio challenges and verifies current Capacity Max system before processing a received DGNA protocol data unit (PDU). If disabled, the radio processes the DGNA PDU without authentication process. The default value is disabled.

3.49.4
Timers (Capacity Max Systems)

The **Timers** section of the Capacity Max Systems set contains the following fields:

3.49.4.1
Channel Grant Waiting Timer (sec)

This is the maximum time a radio waits for its channel grant after receiving an initial response (WACK/QACK) from the system for a service request that requires a trunk channel.

In a properly designed system (call rate and call duration versus number of repeaters) calls should only be briefly queued before a resource is granted. If radios are experiencing long queuing times, and the call fails, this timer can be increased to allow the radios to wait longer.

NOTICE: The call request remains in the trunking controller queue after the radio's Channel Grant Waiting Timer expires.

Range	
Maximum	60
Minimum	4
Increment	1

3.49.4.2

Response Waiting Timer (sec)

This field sets the maximum time a radio waits for a response from the system for a service request that does not require a trunk channel (for example, Registration, Call Alert, UDT data message).

Range	
Maximum	20.0
Minimum	2.0
Increment	0.1

3.49.4.3

Denied Registration Duration (sec)

This field sets the minimum duration for which a radio does not register at a site where its request for registration was explicitly denied.

Zero (0) sec implies that the denied sites are removed only after the radio power cycles.

Range	
Maximum	10000
Minimum	0
Increment	10

3.49.4.4

Comprehensive Hunting Timer (sec)

While performing comprehensive hunting, a subscriber must not hunt continuously for more than the time set in the Comprehensive Hunt Timer.

When the time expires, the radio suspends the comprehensive hunting and the short hunting starts.

Range	
Maximum	30
Minimum	5
Increment	1

3.49.4.5

Group Call Hang Time (sec)

Sets the duration the repeater reserves the channel after the end of a group call transmission.

During this time, only members of the Group that the channel is reserved for can transmit. This produces smoother conversation.

Range:

Maximum	Minimum	Increment
60 sec	0 sec	1 sec

3.49.4.6

Private Call Hang Time (sec)

Sets the duration the repeater reserves the channel after the end of a individual call transmission.

During this time, only the individuals involved in the call that the channel is reserved for can transmit. This produces smoother conversation. The user may want to set a longer hang time than the Group Call Hang Time as an individual tends to take a longer time to reply (talkback) in a Private Call.

Range:

Maximum	Minimum	Increment
60 sec	0 sec	1 sec

3.49.4.7

Emergency Call Hang Time (sec)

Sets the duration the repeater reserves the channel after the end of an emergency call transmission.

During this time, only members of the Group that the channel is reserved for can transmit. This produces smoother conversation. The user may want to set the longest hang time as compared to the Private and Group Call Hang Time to reserve the channel long enough to receive an emergency response.

Range:

Maximum	Minimum	Increment
60 sec	0 sec	1 sec

3.49.4.8

No Signaling Timeout (sec)

This field sets the duration the radio remains on a control channel without receiving a synchronization message.

Range	
Maximum	15
Minimum	1
Increment	1

3.49.4.9

Payload Channel Flywheel Duration (sec)

This field allows the user to set the flywheel duration for payload channel.

Payload channel flywheel out is to lose synchronization with the payload channel. If the radio flywheels out while on the payload channel, it assesses the possibility for call handover to an adjacent site's payload channel. If the radio is not in a call handover, it enters the control channel hunting mode.

Range	
Maximum	5.40
Minimum	0.72
Increment	0.12

3.49.4.10

Call Reconnect Time (sec)

Call Reconnect allows the user to rejoin the same talkgroup call that is interrupted, while forgoing other talkgroup calls with equal or lower priority.

This field allows the user to select the waiting time duration for an ongoing grant of the interrupted call.

Range	
Maximum	10
Minimum	1
Increment	1

3.49.4.11

Inter-Repeater Messaging Delay (ms)

This drop-down list allows the user to set the inter-repeater messaging delay to the expected worst case repeater to repeater network delay.

The options are **60**, **90**, and **150**. If the network delay is especially high, then the value can be set to **90**.

NOTICE: Increasing the inter-repeater messaging delay to **90** or **150**increases response timers to accommodate for longer delays. This will ultimately impact call performance even if actual delays are normal. Most networks have inter-repeater delays well below 60 ms.

3.49.4.12

Inactivity Check Timer (hour)

The inactivity check timer sets the periodic registration interval in the radio and the de-registration interval in the Capacity Max system.

If for the duration of the periodic registration interval, the system monitors no activity from a registered radio, then it may de-register the radio. If the timer is non-zero and the radio has not received any response for its requests (for example, registration, call, etc…) from the system in the last periodic registration interval, then it re-registers itself.

NOTICE:
A inactivity check timer of 0 implies that the radio is not required to perform any periodic registration.

This feature applies to subscribers, system controller, and MNIS only.

Range:

Maximum	Minimum	Increment
48.0 hour	0.5 hour	0.5 hour

3.49.4.13

Beacon Interval Timer (sec)

This field allows the user to set the interval for broadcasting the beacon by the Shared Frequency Control Channel in a Capacity Max system.

This timer is system wide feature.

Range:

Maximum	Minimum	Increment
10 sec	1 sec	1 sec

3.49.5
Channel Plan List (Capacity Max Systems)

The application allows the user to define multiple Channel Plans in a Capacity Max system. The need for different Channel Plans is dictated by the radio frequency bands used at a site.

The following fields are supported:

3.49.5.1
General (Channel Plan List)

The **General** section of the Channel Plan List section contains the following fields:

3.49.5.1.1
Channel Plan Name

This text field allows the user to enter a name for the Channel Plan.

NOTICE:

- Each Channel Plan within a system must have a unique name.
- The maximum number of characters is 16.

3.49.5.1.2
Frequency Band

This feature displays the frequency band that was selected when adding a new Channel Plan list.

The following frequency bands are supported in Capacity Max.

Band	Descriptions
UHF1	Supports 403–470 MHz
UHF2	Supports 450–527 MHz
UHF Wide Band	Supports 403-527 MHz
VHF	Supports VHF band of 136–174 MHz
300 MHz	Supports 300–360 MHz and 350–400 MHz
350 MHz	
800 MHz	Supports 806–825 MHz and 851–870 MHz
900 MHz	Supports 896–902 MHz and 935–941 MHz
800 ~ 900 MHz	

It is expected that the user has dedicated frequencies available for the control channel. However, the traffic channels can be on shared frequencies.

3.49.5.2
Fixed Channel Plan (Channel Plan List)

The **Fixed Channel Plan** section of the Channel Plan List section contains the following fields:

3.49.5.2.1
Enable, Segment 1

This check box allows the user to enable or disable segment 1 of the Fixed Channel Plan in the Channel Plan.

3.49.5.2.2
Number of Channels, Segment 1

This field allows the user to select the number of channels for Channel ID segment 1 of the Fixed Channel Plan in the Capacity Max System.

Range	
Maximum	1024
Minimum	1
Increment	1

NOTICE: The total number of channels in segments 1-4 must be 4094.

3.49.5.2.3
Frequency Duplex Split (MHz), Segment 1

This field allows the user to select the difference (positive or negative value) of the receive frequency from the transmit frequency in MHz.

This frequency is for Channel ID segment 1 of the Fixed Channel Plan.

Range	
Maximum	50.0000
Minimum	50.0000
Increment	0.0025

3.49.5.2.4
Subscriber Transmit Frequency Base (MHz), Segment 1

This field allows the user to enter the base frequency for Channel ID segment 1 of the Fixed Channel Plan in the Capacity Max System.

The base frequency is used for calculating the transmit frequency.

3.49.5.2.5
Frequency Separation (KHz), Segment 1

This drop-down list allows the user to select the frequency for channel separation for Channel ID segment 1 of the Fixed Channel Plan in the Capacity Max System.

The available options are 12.5KHz and 25.0KHz. The default value is 12.5KHz.

3.49.5.2.6
Enable, Segment 2

This check box allows the user to enable or disable segment 2 of the Fixed Channel Plan in the Channel Plan.

3.49.5.2.7

Number of Channels, Segment 2

This field allows the user to select the number of channels for Channel ID segment 2 of the Fixed Channel Plan in the Capacity Max System.

Range	
Maximum	1024
Minimum	1
Increment	1

NOTICE: The total number of channels in segments 1-4 must be 4094.

3.49.5.2.8

Frequency Duplex Split (MHz), Segment 2

This field allows the user to select the difference (positive or negative value) of the receive frequency from the transmit frequency in MHz.

This frequency is for Channel ID segment 2 of the Fixed Channel Plan.

Range	
Maximum	50.0000
Minimum	50.0000
Increment	0.0025
Default	0.0000

3.49.5.2.9

Subscriber Transmit Frequency Base (MHz), Segment 2

This field allows the user to enter the base frequency for Channel ID segment 2 of the Fixed Channel Plan in the Capacity Max System.

The base frequency is used for calculating the transmit frequency.

3.49.5.2.10

Frequency Separation (KHz), Segment 2

This drop-down list allows the user to select the frequency for channel separation for Channel ID segment 2 of the Fixed Channel Plan in the Capacity Max System.

The available options are 12.5KHz and 25.0KHz. The default value is 12.5KHz.

3.49.5.2.11

Enable, Segment 3

This check box allows the user to enable or disable segment 3 of the Fixed Channel Plan in the Channel Plan.

3.49.5.2.12

Number of Channels, Segment 3

This field allows the user to select the number of channels for Channel ID segment 3 of the Fixed Channel Plan in the Capacity Max System.

Range	
Maximum	1023
Minimum	0
Increment	1

NOTICE:

- The total number of channels in segments 1-4 must be 4094.

3.49.5.2.13

Frequency Duplex Split (MHz), Segment 3

This field allows the user to select the difference (positive or negative value) of the receive frequency from the transmit frequency in MHz.

This frequency is for Channel ID segment 3 of the Fixed Channel Plan.

Range	
Maximum	50.0000
Minimum	50.0000
Increment	0.0025
Default	0.0000

3.49.5.2.14

Subscriber Transmit Frequency Base (MHz), Segment 3

This field allows the user to enter the base frequency for Channel ID segment 3 of the Fixed Channel Plan in the Capacity Max System.

The base frequency is used for calculating the transmit frequency.

3.49.5.2.15

Frequency Separation (KHz), Segment 3

This drop-down list allows the user to select the frequency for channel separation for Channel ID segment 3 of the Fixed Channel Plan in the Capacity Max System.

The available options are 12.5KHz and 25.0KHz. The default value is 12.5KHz

3.49.5.2.16

Enable, Segment 4

This check box allows the user to enable or disable segment 4 of the Fixed Channel Plan in the Channel Plan.

3.49.5.2.17

Number of Channels, Segment 4

This field allows the user to select the number of channels for Channel ID segment 4 of the Fixed Channel Plan in the Capacity Max System.

Range	
Maximum	1023
Minimum	0
Increment	1

NOTICE:

- The total number of channels in segments 1-4 must be 4094.

3.49.5.2.18

Frequency Duplex Split (MHz), Segment 4

This field allows the user to select the difference (positive or negative value) of the receive frequency from the transmit frequency in MHz.

This frequency is for Channel ID segment 4 of the Fixed Channel Plan.

Range	
Maximum	50.0000
Minimum	50.0000
Increment	0.0025
Default	0.0000

3.49.5.2.19

Subscriber Transmit Frequency Base (MHz), Segment 4

This field allows the user to enter the base frequency for Channel ID segment 4 of the Fixed Channel Plan in the Capacity Max System.

The base frequency is used for calculating the transmit frequency.

3.49.5.2.20

Frequency Separation (KHz), Segment 4

This drop-down list allows the user to select the frequency for channel separation for Channel ID segment 4 of the Fixed Channel Plan in the Capacity Max System

The available options are 12.5KHz and 25.0KHz. The default value is 12.5KHz.

3.49.5.3

Flexible Channel Plan (Channel Plan List)

The **Flexible Channel Plan** section of the Channel Plan List section contains the following fields:

3.49.5.3.1
Physical Channel ID

This field allows the user to set the channel identification for the receive or transmit frequencies in a Flexible Channel Plan.

Range:

Maximum	Minimum	Increment
4094	1	1

3.49.5.3.2
Repeater Rx Frequency (MHz)

This field allows the user to specify the receive frequency of the Flexible Channel Plan in a Capacity Max system.

3.49.5.3.3
Repeater Tx Frequency (MHz)

This field allows the user to specify the transmit frequency of the Flexible Channel Plan in a Capacity Max system.

3.49.6
Capacity Max Sites (Capacity Max Systems)

The Capacity Max Sites section allows the user to add, delete, and modify the sites in the system, including RF Sites and Gateway Sites. RF Sites contain Capacity Max channels. Gateway Sites are used for the VRC Gateway and the MNIS Data Gateway.

The following fields are supported:

3.49.6.1
Network (Capacity Max Sites)

The **Network** section of the Capacity Max Sites section contains the following fields:

3.49.6.1.1
Site ID

This field allows the user to enter the ID for the site. The Site ID allocated to a site must be unique.

The following selections are supported.

Table 53: Range

Network Model	Site ID Range
Tiny	0-7
Small	0-31
Large	0-1023

3.49.6.1.2
Site Type

This fields displays the **Site Type** that is selected by the user when adding a Capacity Max Site to the list.

The following are the supported site types:

- RF Site
- Gateway Site

3.49.6.1.3
Channel Plan

This field allows the user to select the Channel Plan for the site.

All channels at the site use the selected Channel Plan to determine their TX/RX frequencies and Physical Channel ID.

3.49.6.1.4
Base IP

This field allows the user to enter the Base IP of the site.

The Base IP is the subnet address of an RF Site. The IP addresses of the repeaters and their roles are automatically calculated from this Base IP and the repeater's Device ID.

The range is `0.0.0.0` to `255.255.255.255`.

3.49.6.1.5
Centralized Distribution

Allows the user to enable/disable centralized distribution.

The RM allows a site to be configured for centralized distribution. When enabled, the user can set if the overall bandwidth of the site falls below a certain trheshold as determined by the bandwidth calculation tool.

3.49.6.1.6
Base UDP Port

This field allows the user to enter the number of the Base UDP Port.

The Base UDP port is the first UDP port for a RF site. All UDP ports utilized by the repeaters are calculated from the base UDP port.

The range is 49152– 65535 with an increment of 1.

3.49.6.1.7
Default Gateway IP

This field allows the user to enter the number of the Gateway IP.

The Network Gateway IP is the address of the node that forwards packets to other networks. For RF sites, this is typically the site router’s IP address.

The range of the Base IP address is `0.0.0.0` to `255.255.255.255`.

3.49.6.1.8
Subnet Mask

This field allows the user to enter the number of the Subnet Mask.

The Network IP Address and Subnet Mask together describe the Network ID. For example, destination `172.16.1.0` and netmask `255.255.255.0` can be written as network ID `172.16.1.0/24`. For an RF site, the Subnet Mask is typically `255.255.255.0`

The range is `0.0.0.0` to `255.255.255.255`.

3.49.6.1.9
GNSS Longitude

This field defines the GNSS longitude for a Motorola Network Interface Service (MNIS) Gateway.

If High Efficiency Data is enabled in the system, the GNSS longitude coordinate of the RF Site must be provided. Positive means north. Negative means south.

Range:

Maximum	Minimum	Increment
180 degrees	-180 degrees	0.01 degrees

3.49.6.1.10
GNSS Latitude

This field defines the GNSS latitude for Motorola Network Interface Service (MNIS) Gateway.

If High Efficiency Data is enabled in the system, the GNSS latitude coordinate of the RF Site must be provided. Positive means north. Negative means south.

Range:

Maximum	Minimum	Increment
90 degrees	-90 degrees	0.01 degrees

3.49.6.2
Site Name

This text field allows the user to enter a name for the site.

The maximum number of characters is 16.

NOTICE: The Site Name is unique for each system.

3.49.6.3
Subscriber (Capacity Max Sites)

The **Subscriber** section of the Capacity Max Sites section contains the following fields:

3.49.6.3.1
Roaming RSSI Threshold (dBm)

This field allows the user to set the threshold value for the Roaming Received Signal Strength Indication (RSSI) Threshold.

This Roaming RSSI Threshold divides the acceptable signal coverage into no-roaming and roaming-in-acceptable area. It also determines the strong signal area within the acceptable signal coverage.

The default value can be adjusted to affect the roaming behavior of the radio. Increasing the Roaming RSSI Threshold decreases the distance from the site where the radio starts roaming. Decreasing the Roaming RSSI Threshold increases the distance from the site where the radio starts roaming.

Range	
Maximum	0
Minimum	124

Increment	1

3.49.6.3.2

Handover RSSI Threshold (dBm)

This field allows you to set the Handover Received Signal Strength Indication (RSSI) threshold.

Capacity Max supports a proprietary in call handover for the radios that are either transmitting, receiving, or are in a call hangtime state in a voice talkgroup call. There are two signal conditions that must be fulfilled. The signal of the current trunked channel is lower than the Handover RSSI Threshold value, and there is at least one adjacent trunked channel that has signal strength more than 6 dBm greater than the current trunked channel.

Range	
Maximum	0
Minimum	124
Increment	1

3.49.6.4

Capacity Max Channels (Capacity Max Sites)

The **Capacity Max Channels** section of the Capacity Max Sites section contains the following fields:

3.49.6.4.1

Channel Name

This text field allows the user to enter the channel name of the Capacity Max channel.

NOTICE:

- The channel name is unique for each site.
- The maximum number of characters is 16.

3.49.6.4.2

Channel Type

This drop-down list allows the user to select the type of Capacity Max channel.

The available options are **Data Revert Channel** and **Trunked Channel**.

3.49.6.4.3

Use Fixed Channel Plan

Enabling this check box allows the channel frequency to align with the Fixed Channel Plan. When this feature is disabled, the channel frequency follows the Flexible Channel Plan.

3.49.6.4.4

Control Channel Capable

This check box sets whether a repeater is capable of becoming the site's control channel.

NOTICE:

- Up to four control channel capable repeaters are allowed per site.
- This feature is enabled when the user sets Channel Type on page 746 to **Trunked Channel**.
- This feature is disabled when the user sets Channel Type to **Data Revert Channel**.

3.49.6.4.5

Control Channel Type

This field allows the user to set the mode of operation for a control channel in a Capacity Max System.

The following selections are supported:

Dedicated
The channel operates as a control channel all the time.

Shared
The channel acts as a control channel and dekeys when not in use. The shared channel remains inactive until a radio or the system accesses the channel.

3.49.6.4.6

Preferred Control Channel

This feature is used to configured this device as a preferred control channel.

Capacity Max allows tagging one or more candidate control channel as “Preferred”. A non-Preferred candidate control channel acts as a control channel only if the site has no “Preferred” candidate control channel. In case of multiple preferred control channels, the preferred channel having the lowest device ID is selected as the control channel.

NOTICE: Preferred Control Channel is set to **No** when Control Channel Capable on page 746 is disabled.

3.49.6.4.7

Trunk Channel Preference Level

This field allows the user to adjust the preference level for the trunked channel.

The preference level range is from 1 (Highest) to 5 (Lowest) with a default value is 1. This value is configured in the trunk repeater. The TCM sends this value to the TC via the CCM. The TC allocates a high preference trunk channel to a call before a low preference trunk channel.

NOTICE: This feature only applies to repeaters.

3.49.6.4.8

Physical Channel ID

This field allows the user to set the channel identification that is used to determine the receive and transmit frequencies.

Range:

Maximum	Minimum	Increment
4094	1	1

3.49.6.4.9

Repeater RX Frequency (MHz)

This field allows the user to specify the receive frequency of the Capacity Max channel.

If the channel has Use Fixed Channel Plan checked, the receive frequency is determined according to the Channel ID and the Fixed Channel Plan assigned to the channel's Site. If the channel does not have Use Fixed Channel Plan checked, the receive frequency is determined using the Flexible Channels from the Channel Plan assigned to the channel's Site.

3.49.6.4.10

Repeater TX Frequency (MHz)

This field allows the user to specify the transmit frequency of the Capacity Max channel.

If the channel has Use Fixed Channel Plan checked, the transmit frequency is determined according to the Channel ID and the Fixed Channel Plan from the Channel Plan assigned to the channel's Site. If the channel does not have Use Fixed Channel Plan checked, the transmit frequency is determined using the Flexible Channels from the Channel Plan assigned to the channel's Site.

3.49.6.4.11

Color Code

This field allows you to select the color code of the Capacity Max channel.

The color code is used to differentiate multiple signals that may be present on a single frequency.

Range	
Maximum	15
Minimum	0
Increment	1

NOTICE:

- Repeaters that are configured with **Channel Type** as **Trunked Channel**, or **Trunked & Data Revert Channel** must have the same color code in the same site.
- Repeaters that are configured with **Channel Type** as **Data Revert Channel** may have different color codes in the same site.

3.49.6.4.12

Control Channel Slot

This field allows the user to select the slot number of Capacity Max channel.

This field is only applicable for Trunked Channels that have Control Channel Capable enabled.

NOTICE:

- This feature depends on System Type on page 724.
- When System Type is set **Capacity Max Open Radio**, the Control Channel Slot is configurable. The options are 1 and 2 with a default value of 1.
- When System Type is set **Capacity Max Open System** or **Capacity Max Advantage**, the Control Channel Slot is non-configurable. The default value is 1.

3.49.6.4.13

Enable (Slot 1)

This field enables slot 1 on the repeater to schedule the GNSS or other scheduled updates of all subscribers.

This is a slot-wide feature. Each slot is configured independently.

NOTICE:
This fields is always set to **Yes** and cannot be modified.

Enhanced GNSS settings are only visible when Channel Type on page 746 is set to **Data Revert Channel**.

3.49.6.4.14

Window Size (Slot 1)

This field displays the Window Size for Enhanced GNSS configured by the system for slot 1.

This field is not configured differently per timeslot, or per repeater, or per site. It is shown for reference only.

Range:

Maximum	Minimum	Increment
10	1	1

NOTICE:
This field is only visible when Channel Type on page 746 is set to **Data Revert Channel**.

This feature can only be used by Location CSBK Data.

This feature is hidden when the Digital or Enhanced GNSS feature is disabled. This is only applicable to a digital channel.

This feature is hidden when the Digital, Capacity Max, or Enhanced GNSS feature is disabled. This is only applicable to a Capacity Max data channel.

This feature is hidden when the Digital, Linked Capacity Max, or Enhanced GNSS feature is disabled. This is only applicable to a Linked Capacity Max data channel.

If the Window Size is configured as 1 or 2, user can use the updated rate of 7.5s/15s/30s/1min/2min.

If the window size is configured as 5, 6, 7, 8, 9 or 10, user can use the updated rate of 30s/1min/2min/4min/8min.

The Window Size of the subscriber units must be the same with the Repeater to avoid collision and loss of GNSS data transmission functionality.

This feature is supported in Digital mode only.

3.49.6.4.15

Periodic Window Reservation (Slot 1)

Specifies the percentage of windows that can be reserved for periodic updates for the Enhanced GNSS Slot 1.

NOTICE: Enhanced GNSS settings are only visible when Channel Type on page 746 is set to **Data Revert Channel**.

The available choices are None, 45%, 60%, 75%, and 90%. If 90% is selected, then 90% of the total available windows are reserved for periodic updates and the remaining 10% are reserved for a one-time updates. If there is a high call volume on the selected channel, the system should not run at 90% capacity, instead use 60% or 45% capacity. Periodic Window Reservation is a slot-wide feature.

NOTICE:
This feature is enabled if Enable (Slot 1) is enabled.

The None choice is applicable only when Capacity Max is set to Slot 1 or Slot 1 and Slot 2.

In a Capacity Max system, when this feature is set to 45%, 60%, 75%, or 90%, it configures the slot as the Scheduler. When the feature is set to None, it configures the slot as the Slave. There should be one Scheduler for the Enhanced GNSS feature in a Capacity Max system.

This feature is supported in Digital mode only.

3.49.6.4.16

Shared Channel Frequency (Slot 1)

When enabled, this field configures repeater slot 1 as a shared channel frequency for Capacity Max Channels.

NOTICE: Enhanced GNSS settings are only visible when Channel Type on page 746 is set to **Data Revert Channel**.

NOTICE:
This feature is enabled if repeater slot is configured for Enhanced GNSS.

This feature is hidden when the user disables the Digital or Enhanced GNSS feature. This dependency is only applicable to a Digital Channel.

This feature is hidden when the user disables the Digital, Capacity Max, or Enhanced GNSS feature. This dependency is only applicable to a Capacity Max Channel.

This feature is enabled if Periodic Window Reservation (Slot 1) is not set to None.

This feature is supported in Digital mode only.

3.49.6.4.17

Enable (Slot 2)

This field enables slot 2 on the repeater to schedule the GNSS or other scheduled updates of all subscribers.

This is a slot-wide feature. Each slot is configured independently.

NOTICE:
This fields is always set to **Yes** and cannot be modified.

Enhanced GNSS settings are only visible when Channel Type on page 746 is set to **Data Revert Channel**.

3.49.6.4.18

Window Size (Slot 2)

This field displays the Window Size for Enhanced GNSS configured by the system for slot 2.

This field is not configured differently per timeslot, or per repeater, or per site. It is shown for reference only.

Range:

Maximum	Minimum	Increment
10	1	1

NOTICE:
This field is only visible when Channel Type on page 746 is set to **Data Revert Channel**.

This feature can only be used by Location CSBK Data.

This feature is hidden when the Digital or Enhanced GNSS feature is disabled. This is only applicable to a digital channel.

This feature is hidden when the Digital, Capacity Max, or Enhanced GNSS feature is disabled. This is only applicable to a Capacity Max data channel.

This feature is hidden when the Digital, Linked Capacity Max, or Enhanced GNSS feature is disabled. This is only applicable to a Linked Capacity Max data channel.

If the Window Size is configured as 1 or 2, user can use the updated rate of 7.5s/15s/30s/1min/2min.

If the window size is configured as 5, 6, 7, 8, 9 or 10, user can use the updated rate of 30s/1min/2min/4min/8min.

The Window Size of the subscriber units must be the same with the Repeater to avoid collision and loss of GNSS data transmission functionality.

This feature is supported in Digital mode only.

3.49.6.4.19

Periodic Window Reservation (Slot 2)

Specifies the percentage of windows that can be reserved for periodic updates for the Enhanced GNSS Slot 2.

NOTICE: Enhanced GNSS settings are only visible when Channel Type on page 746 is set to **Data Revert Channel**.

The available choices are None, 45%, 60%, 75%, and 90%. If 90% is selected, then 90% of the total available windows are reserved for periodic updates and the remaining 10% are reserved for a one-time updates. If there is a high call volume on the selected channel, the system should not run at 90% capacity, instead use 60% or 45% capacity. Periodic Window Reservation is a slot-wide feature.

NOTICE:
This feature is enabled if Enable (Slot 2) is enabled.

The None choice is applicable only when Capacity Max is set to Slot 2 or Slot 1 and Slot 2.

In a Capacity Max system, when this feature is set to 45%, 60%, 75%, or 90%, it configures the slot as the Scheduler. When the feature is set to None, it configures the slot as the Slave. There should be one Scheduler for the Enhanced GNSS feature in a Capacity Max system.

This feature is supported in Digital mode only.

3.49.6.4.20
Shared Channel Frequency (Slot 2)

When enabled, this field configures repeater slot 2 as a shared channel frequency for Capacity Max Channels.

NOTICE: Enhanced GNSS settings are only visible when Channel Type on page 746 is set to **Data Revert Channel**.

NOTICE:
This feature is enabled if repeater slot is configured for Enhanced GNSS.

This feature is hidden when the user disables the Digital or Enhanced GNSS feature. This dependency is only applicable to a Digital Channel.

This feature is hidden when the user disables the Digital, Capacity Max, or Enhanced GNSS feature. This dependency is only applicable to a Capacity Max Channel.

This feature is enabled if Periodic Window Reservation (Slot 2) is not set to None.

This feature is supported in Digital mode only.

3.49.7
Adjacent Sites (Capacity Max System)

The Adjacent Sites section allows the user to define the geographical adjacent relationship between RF Sites. Each RF Site, also known as Home Site, can have up to 7 adjacent sites. The subscriber attempts to connect with both the RF Site and its Adjacent Sites.

The following fields are supported:

3.49.7.1
Site Name

This field allows the user to enter an alias that uniquely identifies the set within a list of similar sets.

An error message is displayed when trying to save a user-specified Site Name already in use.

3.49.7.2
Site ID

This field allows the user to enter the ID of the site that connects to the Capacity Max system.

3.49.7.3
Adjacent Site #1

The **Adjacent Site #1** field allows the user to select the available sites from the Select set window as the adjacent site 1.

As sites are added to the Capacity Max System set, these Sites are automatically added to the Adjacent Sites list. Click on the drop-down list to select which sites are adjacent for each site.

3.49.7.4
Adjacent Site #2

The **Adjacent Site #2** field allows the user to select the available sites from the Select set window as the adjacent site 2.

As sites are added to the Capacity Max System set, these Sites are automatically added to the Adjacent Sites list. Click on the drop-down list to select which sites are adjacent for each site.

3.49.7.5
Adjacent Site #3

The **Adjacent Site #3** field allows the user to select the available sites from the Select set window as the adjacent site 3.

As sites are added to the Capacity Max System set, these Sites are automatically added to the Adjacent Sites list. Click on the drop-down list to select which sites are adjacent for each site.

3.49.7.6
Adjacent Site #4

The **Adjacent Site #4** field allows the user to select the available sites from the Select set window as the adjacent site 4.

As sites are added to the Capacity Max System set, these Sites are automatically added to the Adjacent Sites list. Click on the drop-down list to select which sites are adjacent for each site.

3.49.7.7
Adjacent Site #5

The **Adjacent Site #5** field allows the user to select the available sites from the Select set window as the adjacent site 5.

As sites are added to the Capacity Max System set, these Sites are automatically added to the Adjacent Sites list. Click on the drop-down list to select which sites are adjacent for each site.

3.49.7.8
Adjacent Site #6

The **Adjacent Site #6** field allows the user to select the available sites from the Select set window as the adjacent site 6.

As sites are added to the Capacity Max System set, these Sites are automatically added to the Adjacent Sites list. Click on the drop-down list to select which sites are adjacent for each site.

3.49.7.9
Adjacent Site #7

The **Adjacent Site #7** field allows the user to select the available sites from the Select set window as the adjacent site 7.

As sites are added to the Capacity Max System set, these Sites are automatically added to the Adjacent Sites list. Click on the drop-down list to select which sites are adjacent for each site.

3.49.8
Site Announcement (Capacity Max System)

The Site Announcement section allows the user to configure the sites that will be announced in the system. Subscriber units can discover and roam to the announced sites over the air.

The following fields are supported:

3.49.8.1
Announced Site

This drop-down list allows the user to select the specific Site.

The selected Site is announced by Announcement Sites over-the-air, so subscribers can discover the announced Site without programming using Radio Management.

3.49.8.2
Announcement Duration

This field allows the user to specify the duration within which the Announcement Sites will announce the new Site(s) over the air.

Range:

Maximum	Minimum	Increment
240 hours	1 hour	1 hour

Default: 8 hours

3.49.8.3
Selected

This field displays the selected Site.

3.49.9
Verification Application

The Verification Application section of the Capacity Max Systems set allows the user to embed up to 17 records.

The following fields are supported:

3.49.9.1
Domain ID (Verification Application)

The Domain ID must be unique and range from 1 to 16.

3.49.9.2
IP (Verification Application)

When Domain ID is not **0**, the IP of the verificatin application is enabled. Otherwise, this field is disabled.

3.49.9.3
Port (Verification Application)

When the Domain ID is not **0**, the Verification Application's UDP Port is enabled. Otherwise, this field is disabled.

The following range are supported:

Table 54: Range

Minimum	Maximum	Increments
0	65535	1

3.49.10
Dynamic Group Number Assignments

Dynamic Group Number Assignments (DGNA) allows the user to dynamically add or remove a talkgroup and associated talkgroup alias on a radio over the air. DGNA allows cross communication between teams on site or dynamic assignation of talkgroup to a subset of members.

The following fields are supported:

3.50
Capacity Max Radio Wide Features Set

The **Capacity Max Radio Wide Features** set contains features that are common to all Capacity Max system configurations.

The following fields are supported:

3.50.1
Control Channel Response Timer (ms)

This field allows the user to determine the time period for the radio to detect a number of consecutive signaling bursts during control channel acquisition while performing comprehensive control channel hunting.

During comprehensive hunting, the radio qualifies the control channel slot successfully after the radio detects the consecutive number (Nccburst) of any combination of control channel bursts, within the Control Channel Burst Waiting time period.

Range:

Maximum	Minimum	Increment
600	0	60

3.50.2
Non-Emergency Random Access Attempts

The Random Access procedure is the method for the radio to access the control channel.

The user initiates all services over the control channel by transmitting a Protocol Data Unit (PDU) over the air. The main purpose of the Random Access procedure is to reduce collisions in case multiple radios access the control channel simultaneously. This procedure also minimizes the access delays and maximizes throughput under heavy traffic loads. This field allows the user to select the maximum permitted attempts for a non-emergency random access request.

Range	
Maximum	10
Minimum	3
Increment	1
Default	6

3.50.3
Emergency Random Access Attempts

The Random Access procedure is the method for the radio to access the control channel.

The user initiates all services over the control channel by transmitting a Protocol Data Unit (PDU) over the air. The main purpose of the Random Access procedure is to reduce collisions in case multiple radios access the control channel simultaneously. This procedure also minimizes the access delays

and maximizes throughput under heavy traffic loads. This field allows the user to set the maximum permitted attempts for an emergency random access request.

Range	
Maximum	20
Minimum	5
Increment	1
Default	10

3.50.4
Site Trunking Tone Interval (min)

This field allows the user to determine the time interval for the Site Trunking Tone.

When in a Site Trunking mode, the radio sounds the Site Trunking Tone after each interval. The return value is in minutes.

Range	
Maximum	32
Minimum	0
Increment	1
Default	2

NOTICE: When the user selects 0 for this feature, the Site Trunking Tone does not sound even if the radio is in a Site Trunking mode.

3.50.5
Out of Range Tone Duration (min)

The radio declares an Out of Range (OOR) in a certain conditions.

The conditions are as follows:

- when it cannot find a qualified control channel or failsoft control channel
- after completing the short hunting sequence, long hunting sequence, and failsoft hunting sequence

The radio remains in the OOR condition until it is able to lock onto an active control channel or failsoft channel. This field allows the user to determine the time interval for the Out of Range Tone. When in an OOR condition, the radio sounds the Out of Range Tone after each interval. The return value is in minutes.

Range	
Maximum	32
Minimum	0
Increment	1
Default	1

NOTICE: When the user selects 0 for this feature, the Out of Range Tone does not sound even if the radio is in an OOR condition.

3.51
Capacity Max Site Selection Set

The **Capacity Max Site Selection** set defines the partition category along with the Capacity Max preference level, channel plan, and frequency band.

The following fields are supported:

3.51.1
System Name

This read-only field displays the Capacity Max system name assigned under the Capacity Max System Set.

3.51.2
Partition Category

This drop-down list allows the user to select the radio categorization to partition the radio population in a site that uses two control channels.

The options are Category A and Category B.

NOTICE:

- This feature depends on System Type.
- When System Type is Non-MSI Capacity Max or Non-MSI PDT, the Partition Category is configurable.
- When System Type is DMR or PCC, the Partition Category is non-configurable and is set to Category A by default.

3.51.3
Site ID

This read-only field displays the **Site ID** assigned under the Capacity Max System Set.

3.51.4
Site Name

This read-only field displays the **Site Name** assigned under the Capacity Max System Set.

The maximum number of characters is 16 and the default value is Site 1.

NOTICE:

- The Site Name is unique for each system.

3.51.5
Preference Level

This drop-down field allows the user to adjust the preferred usage level for the repeaters assigned to the site in the Capacity Max system.

The Preference Level can be adjusted from **None** to **Level 1** (Least Preferred) to **Level 4** (Most Preferred).

NOTICE: The default value of the Preference Level is **None**, that is the same as setting the Preference Level to **Level 2**.

3.51.6
Channel Plan Name

This read-only field displays the **Channel Plan Name** assigned under the Capacity Max System Set.

NOTICE:

- The channel name is unique for each system.
- The maximum number of characters is 16.

3.51.7
Frequency Band

This read-only field displays the frequency band that was selected when adding a new Channel Plan list under the Capacity Max System Set.

3.51.8
Voice Announcement File

This drop-down list allows the user to select the voice announcement file for the Capacity Max channel.

Voice announcement is played when the user switches to this channel. The options are None and all available voice announcement files. The default value is None.

NOTICE:

- This feature is disabled if None is the only choice.

3.51.9
Capacity Max Status List

Allows the user to add or delete the Capacity Max Status List records.

The user can create up to 100 Capacity Max Status List items in a Capacity Max Status List.

The user can enable or disable a radio to initiate the Status Call Tx column by adding a field to the Subscriber Access Control (SAC).

The following fields are supported:

3.51.9.1
Capacity Max Status List

Contains a list of records of the Capacity Max Statuses.

The user can select one Capacity Max Status List from the Capacity Max Systems record.

3.51.9.2
Capacity Max Status

Contains a list of Capacity Max Status List Items.

You can select one Capacity Max Status List from the Capacity Max Systems record.

3.51.9.3
Status (Capacity Max Status List Item)

Allows the user to write the status item list for the status list. User can write up to 16 characters.

When the Mode (One Touch Access) on page 496 is set as **Capacity Max Mode**, you can configure the Capacity Max Status List item from the Control Buttons.

3.51.9.4
ID (Capacity Max Status List Item)

You can set the status ID for the Status List. The ID range is from 0–99.

3.52
Capacity Max Emergency Systems Set

The **Capacity Max Emergency Systems** set contains features for configuring alarm types and modes along with RX and TX cycle times.

The following fields are supported:

3.52.1
System Name

This text field allows the user to enter the name of the Capacity Max Emergency System.

The maximum number of characters is 16. The default name is *Sys 1*.

3.52.2
Alarm Type

An alarm is a non-voice signal that triggers an alert indication on another radio.

This field allows the user to select the alarm behavior of the initiating radio when the emergency button is pressed.

Disabled
The radio is unable to transmit an alarm signal.

Regular
The radio transmits an alarm signal and provides audio and visual indication that it is in Emergency mode.

Silent
The radio transmits an alarm signal but gives no audio or visual indication that it is in Emergency mode. The radio does not unmute to any received audio.

Silent w/ Voice
The radio transmits an alarm signal but gives no audio or visual indication that it is in Emergency mode. The radio then unmutes to qualified channel activity.

NOTICE:
When the user selects *Disable* for Alarm Type, the radio wide emergency feature is disabled.

3.52.3
Mode

An alarm is a non-voice signal that triggers an alert indication on another radio.

This field allows the user to select the alarm behavior of the initiating radio when the emergency button is pressed.

Emergency Alarm
The radio sends an emergency alarm and exits the emergency mode. This alarm is a non-voice signal that triggers an alert indication on another radio.

Emergency Alarm w/ Call
An emergency alarm is sent, after which an emergency call can be transmitted by pressing the Push-To-Talk (PTT) button.

Emergency Alarm w/ Voice to Follow

This option enables the Hot Mic feature, allowing the programming of the Hot Mic related features, such as Hot Mic Duration. An emergency alarm is sent and the microphone is activated for an emergency call. Voice is transmitted without the need to press the Push-To-Talk (PTT) button.

3.52.4
Tx Cycle Time (sec)

This drop-down list allows the user select the time duration for the radio to remain in transmit mode, without the intervention and in an emergency Hot Mic cycle.

Range:

Maximum	Minimum	Increment	Default
120	10	10	10

NOTICE:
This feature is configurable when the user sets the Mode to **Emergency Alarm with Voice to Follow**.

3.52.5
Cycles

This drop-down list allows the user select the number of times the radio cycles between transmitting and receiving before going permanently into receiving mode in the Capacity Max Emergency System.

Range:

Maximum	Minimum	Increment	Default
10	1	1	3

NOTICE:
This feature is configurable when the user sets the Mode to **Emergency Alarm with Voice to Follow**.

3.52.6
Rx Cycle Time (sec)

This drop-down list allows the user select the time duration for the radio to remain in receive mode, without the intervention and in an emergency Hot Mic cycle.

Range:

Maximum	Minimum	Increment	Default
120	10	10	10

NOTICE:
This feature is configurable when the user sets the Mode to **Emergency Alarm with Voice to Follow**.

3.52.7
Contact Name

This drop-down list allows the user select the contact. The options are None and all available contacts for the Capacity Max Emergency System.

Emergency alarms and emergency voice is addressed to a talkgroup. The selection of which talkgroup makes a big difference in the overall operation of emergency. The "contact" field decides the emergency talkgroup as:

- Tactical

  Tactical emergency is the act of sending an emergency on the currently selected talkgroup. It allows everyone in the currently-selected talkgroup to monitor the emergency situation. Each talkgroup may have a dedicated dispatcher that handles emergency situations, or the entire group may need to be notified that someone in the talkgroup is in emergency. In a system with many talkgroups, a tactical configuration requires the dispatcher to monitor every talkgroup for emergencies, that could become cumbersome. In addition, the remaining members of the talkgroup must yield use of the talkgroup to the individual in emergency.

  For tactical emergency operation, select **None**"option.

- Reverting

  Reverting emergency is the act of sending an emergency on a predetermined talkgroup. It allows the user to leave their currently-selected talkgroup and communicate to the dispatcher on a dedicated emergency talkgroup.

  This allows a dispatcher to monitor the dedicated emergency talkgroup and all other users revert to him in case of an emergency. This minimizes the possibility of supervisors missing emergencies on one talkgroup, while monitoring other talkgroups. It also allows a clear channel of communication for the user in emergency and the dispatcher. The other radio users may not be aware of the emergency situation unless they monitor the dedicated emergency talkgroup.

  For reverting emergency, select a dedicated talkgroup from the available contacts.

NOTICE:
This feature is hidden when Alarm Type is disabled.

3.53
CMSS Network Set

The **CMSS Network** set for a Capacity Max system is used to configure IP addresses and port settings for the CMSS and trunking controller.

The following fields are supported:

3.53.1
CMSS IP

This field allows the user to specify a base IP address for the Capacity Max System Server (CMSS) used to calculate the physical IP addresses.

This IP address will be used to derive IP address of Virtual Machine (VMs) hosted by CMSS.

Format: `[000-255].[000-255].[000-255].[000-240]`

3.53.2
CMSS UDP Port

This field allows the user to specify the base UDP Port for the Capacity Max System Server (CMSS) used to calculate the physical IP addresses.

This IP address will be used to derive IP address of Virtual Machine (VMs) hosted by CMSS.

Table 55: Range

Minimum	Maximum	Increment
49152	65520	1

3.53.3 Trunking Controller IP

This read-only field displays the IP address and UDP Port of the Trunking Controller, which is hosted by the CMSS (Capacity Max System Server).

The IP = CMSS IP + 1 and the UDP Port = CMSS Port.

For example, if the CMSS IP = `192.168.10.0` and the CMSS UDP Port = `50000`, then the Trunking Controller IP is `192.168.10.1:50000`.

3.53.4 Presence Server IP

This read-only field displays the Presence Server IP and UDP Port.

The IP = CMSS IP + 1 and the UDP Port = CMSS UDP Port + 15.

For example, if the CMSS IP = `192.168.10.0` and the CMSS UDP Port = `50000`, then the Presence Server IP = `192.168.10.1:50015`.

3.53.5 VRC Gateway IP

This read-only field displays the Voice and Radio Command (VRC) Gateway IP.

The IP = CMSS IP + 4.

For example, if the CMSS IP = `192.168.10.0`, the VRC Gateway IP = `192.168.10.4`

3.53.6 System Advisor IP

This read-only field displays the System Advisor IP.

The IP = CMSS IP + 5.

For example, if the CMSS IP = `192.168.10.0`, the System Advisor IP = `192.168.10.5`

3.53.7 CMSS Internal Network

The CMSS is configured with an internal network for internal communications between the virtual appliances.

The factory default IP address of this internal network is 192.168.231.0/24. Since this network is completely internal to the CMSS, it is not directly exposed outside of the box and the default setting normally does not need to be changed. However, if there are any other entities in the IP network allocated to that same IP address, it is not able to directly communicate with any of the CMSS virtual appliances. In this case, the IP address of this internal network is changed using Radio Management.

3.53.8
Default Gateway IP

This field allows the user to specify the default gateway network IP address for the Capacity Max System Server (CMSS).

Format: `[000-255].[000-255].[000-255].[000-255]`

3.53.9
Subnet Mask

This field allows the user to specify the subnet mask for the Capacity Max System Server (CMSS).

Format: `[000-255].[000-255].[000-255].[000-255]`

3.53.10
NTP Server

This field allows the user to specify the NTP (Network Time Protocol) Server IP address.

If this feature is set to 0.0.0.0, it shows that there is no NTP Server.

Format: `[000-255].[000-255].[000-255].[000-255]`

3.53.11
Preferred DNS Server IP

This field allows the user to set the IP address for the preferred DNS server.

This IP address is used by the MOTOTRBO Capacity Max Bridge Feature on page 853 to resolve the FNO server address.

Format: `[000-255].[000-255].[000-255].[000-255]`

3.53.12
Alternate DNS Server IP

This field allows the user to set the IP address for an alternate DNS server.

This IP address is used by the MOTOTRBO Capacity Max Bridge Feature on page 853 to resolve the FNO server address.

Format: `[000-255].[000-255].[000-255].[000-255]`

3.54
Flexible Capacity Max RX Group List Set

The **Flexible Capacity Max RX Group List** set contains feature for configuring the available RX groups:

The following section contains all the supported fields:

3.54.1
General (Flexible Capacity Max RX Group List)

The **General** section of the Flexible Capacity Max RX Group List set contains the following fields:

3.54.1.1
Available

This feature displays all the available Digital Talkgroups for the selected Talkgroup list.

NOTICE:
This feature is supported in Digital mode only.

Digital Group Calls must be part of the Available List.

This feature is enabled if the InterOP Mode or Emerald Mode feature is enabled.

3.54.1.2
Members

This feature displays the talkgroups members.

NOTICE:
This feature is supported in Digital mode only.

This feature is enabled if the InterOP Mode or Emerald Mode feature is enabled.

3.54.1.3
Add Button

Adds group(s) from the Available list into the list. Group(s) added to the Members list will be removed from the Available list.

NOTICE:
This feature is disabled if no Talk Group is selected in the Available or Members list, or if the list is empty.

An error message appears when the user attempts to add more talkgroups than the maximum number of talkgroups allowed.

This feature is enabled if the InterOP Mode or Emerald Mode feature is enabled.

This feature is supported in Digital mode only.

3.54.1.4
Remove Button

Removes the highlighted selection from the Members List and, adds the selection back into the Available List.

NOTICE:
This button is disabled, if no selection is highlighted in the selected list or the list is empty.

This feature is disabled if **Available** or **Members** fields are not visible.

This feature is enabled if the InterOP Mode or Emerald Mode feature is enabled.

This feature is supported in Digital mode only.

3.55
Personality Set

The **Personality** set is a group of characteristics such as radio parameters, encryption encoding, and transmit/receive frequency pairs assigned to a channel. Configured personality sets are available for assignment to a zone.

The following personality types can be configured:

- Analog

- Digital
- Capacity Plus Personality
- Capacity Plus Voice
- Capacity Plus Data
- Capacity Plus Personality (Linked)
- Dynamic Mixed Mode
- Capacity Plus Voice (Linked)
- Capacity Plus Data (Linked)
- 5 Tone
- Capacity Max Trunking
- WAVE™

The following sections contain all the supported fields:

3.55.1 General (Conventional Personality)

The **General** section of the Conventional Personality set contains the following fields:

3.55.1.1 Channel Name

This displays the name of the channel.

3.55.1.2 Channel Type (Conventional Personality)

This field allows you to choose the type of personality block.

The available options are Analog, Digital, Capacity Plus Personality, Capacity Plus Voice, Capacity Plus Data, Capacity Plus Personality (Linked), Dynamic Mixed Mode, Capacity Plus Voice (Linked), Capacity Plus Data (Linked), 5 Tone, Capacity Max Trunking, WAVE, and Trunked&DataRevert Channel.

NOTICE:

- This feature is only applicable when you enable the Conventional Capable feature.
- The repeater only accepts one Capacity Plus Channel such as either Capacity Plus Voice or Capacity Plus Data. If there is one Capacity Plus Voice, there cannot be another Voice or Data Channel.

3.55.1.3 Voice Announcement File (Conventional Channel)

Associates a voice announcement file to this channel. This is a channel-wide feature.

Voice announcement is played when the user switches to this channel. Up to 128 channels are supported.

3.55.1.4 Dual Capacity Direct Mode (DCDM)

The Dual Capacity Direct Mode (DCDM) feature supports two simultaneous subscriber transmissions within a 12.5 kHz channel bandwidth for Direct Mode transmissions.

The radios within the same group must use the same timeslot so that the group using timeslot 1 does not interfere with the group using timeslot 2. For proper operation, the radios need to identify and track the timeslot structure. A unique radio is elected as a channel timing leader. The other radios adjust their clocks to synchronize as possible with the channel timing leader.

NOTICE:
This feature is supported in Digital mode only.

This feature is disabled and set to unchecked if the Extended Range Direct Mode on page 768 is enabled.

3.55.1.5
Timing Leader Preference

In a Dual Capacity Direct Mode (DCDM) system, a unique radio needs to be elected as a channel timing leader.

The preferred channel timing leader should be a subscriber that has the following characteristics: always turned on, has large transmit coverage, always selected to Dual Capacity Direct Mode channel, and never scans. When possible, a Mobile should act as the preferred channel timing leader since synchronization beaconing may drain more battery current.

Preferred
Provision the radio as the preferred timing leader, e.g. control station.

Eligible
The radio is able to be the timing leader, but should yield leadership to higherpreference candidates.

Ineligible
Provision the radio to not be the leader, e.g. radio that roams frequently.

NOTICE:
This feature is enabled when the Dual Capacity Direct Mode (DCDM) feature is enabled.

This feature is disabled if the Extended Range Direct Mode on page 768 is enabled.

This feature is supported in Digital mode only.

3.55.1.6
Scan/Roam List

Associates a Scan/Roam List to this channel.

All the members on this list will be scanned during scan operation or roamed during roam operation. Any available Scan/Roam List can be selected. Selecting the None option disables scanning (including Auto Scan) and roaming (including Manual Site Roam) on this channel. For roaming, the list must consist of only IP Site Connect enabled channels. Each channel can only have either Scan or Roam enabled, and not both. If the current digital channel is not an IP Site Connect enabled channel, or if it is an analog channel, only the Scan Lists are displayed. This is a channel-wide feature.

NOTICE:
The Auto Scan feature is disabled if this feature is set to None.

The Auto Scan feature is disabled if the current digital channel is a IP Site Connect enabled channel and this feature associates Roam List(s) to this channel.

Only Scan List is available when the Dual Capacity Direct Mode (DCDM) feature is enabled.

3.55.1.7

Auto Scan (Conventional Channel)

Allows the radio to automatically begin scanning when the user selects the current conventional channel.

When disabled, the user is still able to invoke the scan operation, via a short or long programmable button press (Scan On/Off) or Scan (Scan Menu) feature. This is a channel-wide feature.

NOTICE:
This feature is disabled when the Scan List feature is set to None.

This feature is disabled when the Option Board Trunking feature is enabled (checked).

This feature is not available in the Capacity Plus–Single-Site system.

This feature is applicable to MOTOTRBO Conventional radios and 3600 Trunking capable radios in Conventional mode only.

3.55.1.8

Color Code (Conventional Channel)

This feature allows a color code to be assigned to a given channel.

Channels may have the same or different color codes. A repeater can only have one color code. A color code is used to identify a system. Different color codes are used to identify different systems. This feature enables a radio to roam between multiple systems by switching between channels with different color codes. The radio will be able to scan across channels with different color codes. Radios will ignore any channel activity not containing the matching color code for that system. Repeaters using the same frequency may be associated with different color codes. On shared channels, spectrum regulators may wish to assign different color codes to different licensees as part of their license agreement. This is a channel-wide feature.

Range:

Maximum	Minimum	Increment
15	0	1

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

This feature can be set per digital channel from MOTOTRBO 1.2 and MOTOTRBO SLR Series repeaters releases.

This feature is disabled when Repeater Mode is set to Analog.

The range is 0 to 14 when the Dual Capacity Direct Mode (DCDM) feature is enabled.

This feature is applicable in the repeater Dynamic Mixed Mode channel MOTOTRBO version 1.6a+ and MOTOTRBO SLR Series repeater releases.

3.55.1.9

Inbound Color Code

This feature allows a color code to be assigned to a given inbound channel. Channels may have the same or different color codes.

A color code is used to identify a system. Different color codes are used to identify different systems. This feature enables a radio to roam between multiple systems by switching between channels with different color codes.

The radio will be able to scan across channels with different color codes. The radio will ignore any channel activity not containing the matching color code for that system. Repeaters using the same

frequency may be associated with different color codes. On shared channels, spectrum regulators may wish to assign different color codes to different licensees as part of their license agreement. This is a channel-wide feature.

3.55.1.10
Outbound Color Code

This feature allows a color code to be assigned to a given outbound channel. Channels may have the same or different color codes. A repeater can only have one color code.

A color code is used to identify a system. Different color codes are used to identify different systems. This feature enables a radio to roam between multiple systems by switching between channels with different color codes.

The radio will be able to scan across channels with different color codes. Radios will ignore any channel activity not containing the matching color code for that system. Repeaters using the same frequency may be associated with different color codes. On shared channels, spectrum regulators may wish to assign different color codes to different licensees as part of their license agreement. This is a channel-wide feature.

3.55.1.11
Extended Range Direct Mode

Extended Range Direct Mode is a conventional solution that extends the 12.5e direct mode range.

This feature is applicable for the repeater and allows you to enable Enhanced Channel Access on page 812 feature.

NOTICE:

- This feature disables the Copy button (if this feature is checked).
- For more information about supported features in your radio, see *MOTOTRBO System Planner*.

3.55.1.12
Compatibility Mode

Compatibility Mode enables extended range direct mode for repeater.

This feature supports operation in First Generation MOTOTRBO radio, and mixed fleet radio.

3.55.1.13
Korea Location Data Bearer Service

If Location Protocol Type is enabled as LRRP then Korea Location Data Bearer Service should be IP Data always. It supports only IP Data in this case Short Data should be gray out. Korea Location supports the Short Data and IP Data. If Location Protocol Selection is enabled as LIP then default Data Bearer Service is Short Data.

This feature allows the user to select the data bearer service for the subscriber channel personality.

This value for this feature is dependent on the selection for Location Protocol Type on page 769.

Short Data

LIP protocol support the Short Data and IP Data.

If Location Protocol Selection is enabled as LIP then default Data Bearer Service is Short Data.

IP Data

If LRRP is enabled, then Data Bearer Service is IP Data. Therefore, Short Data is greyed out.

3.55.1.14
Location Protocol Type

Enable this checkbox to specify the protocol to convey the location information is Korea Location Protocol.

Otherwise, the default selection is Location Request and Response Protocol (LRRP).

3.55.1.15
Transmit Interrupt Type

Use this field to specify the standard for transmit interrupt.

The user can select either **Advantage** or **Korea**.

3.55.1.16
Use Vertex Compatible Privacy

This feature makes the privacy compatible for interoperation with Vertex radios.

When enabled, the user is allowed to configure both Enhanced Privacy and Symmetric key list. If Privacy on page 771 is selected, then the configuration switches between the Advantage Enhanced Privacy and Vertex Enhanced Privacy. If Symmetric on page 772 is selected, then the configuration switches between Advantage Symmetric and Vertex Symmetric.

NOTICE: When this feature is enabled, features that are applicable to MSI Privacy the following features are applicable and reused:

- Menu enablement and support to toggle Privacy On/Off.
- Programmable Button assignment and support to toggle Privacy On/Off.
- Encryption Icon to indicate Privacy or Clear Calls.
- Voice Announcement for Privacy setting toggle.
- Mutual exclusivity between Basic Privacy (MSI) and Enhanced/Symmetric Privacy (MSI/Vertex).

3.55.1.17
Repeater/Time Slot

MOTOTRBO utilizes digital Time Division Multiple Access (TDMA) technology to divide a 12.5kHz channel into two alternating time slots, with each carrying an individual call when operating in Repeater mode.

As a result, both the assigned frequency and the assigned time slot must be specified in order to completely describe a digital repeater channel. Radios or Groups that need to talk together must be assigned to the same frequency and time slot. This is a channel-wide feature.

NOTICE:
This feature is only applicable while operating in Repeater mode and Dual Capacity Direct Mode.

This feature is disabled if the Extended Range Direct Mode on page 768 is enabled.

A radio configured for repeater slot 1 or slot 2 operation will always hear a radio transmitting in Talkaround mode regardless of which slot the radio is configured to hear in repeater mode. A receiving radio in Talkaround mode will hear any Talkaround calls as well as repeated calls on the configured repeater slot.

This feature is supported in Digital mode only.

For Capacity Plus–Multi-Site channels, this feature needs to be set the same as the Repeater Channel Slot ID.

3.55.1.18
Phone System

Associates any available Phone System to the channel for use when initiating or receiving a phone call on a conventional channel.

Selecting the None option disables the user from initiating or receiving phone calls on this channel. This is a channel-wide feature.

NOTICE:
This feature is disabled when the Dual Capacity Direct Mode (DCDM) feature is enabled.

This feature is disabled and set to **None** if the Extended Range Direct Mode on page 768 is enabled.

This feature is supported in Digital mode only.

3.55.1.19
ARS

The Automatic Registration Service (ARS) feature provides an automated data application registration for the radio.

When the radio powers up, the radio automatically registers with the server. This feature is used with data applications, i.e. any data traffic on this channel that is associated with an application server such as MOTOTRBO Text Messaging or MOTOTRBO Location Services.

Disabled
Disables the ARS feature.

On System Change
Enables the ARS feature for single site.

On System/Site Change
Enables the ARS feature for single site and when the radio roams from one site to another site (available when IP Site Connect or Auto Roam is enabled).

NOTICE:
This feature is disabled when the Option Board Trunking feature is enabled.

This feature is supported in Digital mode only.

3.55.1.20
Enhanced GNSS

Allows the user to enable the Enhanced GNSS feature on a channel for subscriber models.

This feature mainly helps to offload GNSS messages away from the selected channel with increased reliability and throughput compared to the standard GNSS revert feature by scheduling the GNSS transmissions of the radios. The Enhanced GNSS Revert channel supports ARS and GNSS data from radio internal application as well as GNSS data and Raw data from XCMP device. Voice and other data are not supported on a channel when this feature is enabled. This is a channel-wide feature.

NOTICE:
This feature is applicable in repeater mode only.

This feature is disabled if the Option Board Trunking feature is enabled.

This feature is disabled and set to unchecked if the Extended Range Direct Mode on page 768 is enabled.

This feature is disabled when the Dual Capacity Direct Mode (DCDM) feature is enabled.

3.55.1.21

Network Application Interface Phone

This check box allows the user to enable or disable the Network Application Interface Phone feature.

When NAI Phone is enabled, the MOTOTRBO system will support the telephone calls over repeater NAI interface instead of the 4-wire phone patch.

10 (default)1

NOTICE:
This feature is only applicable for Digital, Capacity Plus Voice and Capacity Plus Voice channels on MOTOTRBO repeaters and MOTOTRBO SLR Series repeaters.

This feature is hidden when the Network Application Interface Voice feature is disabled.

3.55.1.22

Window Size

Allows the user to configure the Window Size for an Enhanced GNSS channel.

Range:

Maximum	Minimum	Increment
10	1	1

NOTICE:
This feature is editable if Enhanced GNSS is editable and enabled.

This feature is disabled when the Dual Capacity Direct Mode (DCDM) feature is enabled.

This feature is disabled if the Extended Range Direct Mode on page 768 is enabled.

This feature is supported in Digital mode only.

3.55.1.23

Privacy

This feature allows privacy on selected digital channels.

Privacy is a software-based scrambling solution that is not robust, and is only meant to prevent eavesdropping. The signaling and user identification portions of a transmission are not scrambled. Receiving radio(s) must have the same Basic Privacy Key as the transmitting radio in order to unscramble the privacy-enabled voice call or to receive the privacy-enabled data transmission.

Channels may have their privacy enabled or disabled via a short or long programmable button press (Privacy On/Off) or Privacy (Utilities Menu). A radio must have privacy enabled on the channel to transmit a privacy-enabled transmission, but this is not necessary for receiving radio(s). Privacy-enabled channels are still able to receive clear (unscrambled) transmissions. A visual indication appears on all display radios if the channel is privacy-enabled. The radio LED lights up green when transmitting and blinks rapidly when receiving an ongoing privacy-enabled transmission. The same behavior will be observed during scan operations. This is a channel-wide feature. This feature is not available on certain radio models.

NOTICE:
This feature is disabled during mix-mode selection.

This feature is hidden when the Digital feature is disabled. This is only applicable for MOTOTRBO Conventional 1.5a+ and MOTOTRBO 2.0+ releases.

This feature is greyed out when Privacy Type is set to None.

This feature is unchecked when Symmetric Keys is set to a value other than None.

3.55.1.24
Privacy Alias

The Privacy Alias feature allows the user to assign the Enhanced Privacy Key/Alias for the channel.

This is a channel-wide feature.

NOTICE:
This feature is greyed out if Privacy Type is set to a value other than Enhanced.

This feature is greyed out when Privacy is unchecked.

This feature is visible if Enhanced Privacy is supported by the radio.

This feature is hidden if the Digital feature is disabled. This is only applicable for 1.5a+ releases.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.55.1.25
Symmetric

Allows the user to assign the Symmetric Keys (AES) and Alias for the channel.

NOTICE:
This feature is hidden if the Symmetric Keys (AES) is disabled.

This feature is greyed-out if Privacy Type is set to Basic.

This feature is greyed-out and set to None if Privacy (Conventional Channel) is enabled.

3.55.1.26
Fixed Privacy Key Decryption

When enabled, the privacy key for decode will be fixed, using the same privacy key as the current transmit (Tx) privacy settings.

3.55.1.27
Ignore Rx Clear Voice/Packet Data

When enabled, the clear voice call received in the personality channel will be muted.

3.55.1.28
RAS Alias

Configures a digital personality to be connected to a specific RAS ID (identified via Key Alias in RM).

When a RAS ID is connected to a specific digital personality, that personality is considered to be RAS-enabled; otherwise, the personality is RAS-disabled.

All radios and repeaters have default RAS Key. All digital channels (both initial and added channels) are defaulted to the default keys. The default key is 000000. To disable RAS, go to Authentication (RAS) on page 528 and select **Disable**. For radios, select the channel in the Radio, and browse to **None**.

NOTICE:
This feature is supported in Digital mode only.

3.55.1.29
Mandown Profile

Configures a conventional personality to be connected to a specific Mandown Profile.

NOTICE:
This feature is disabled until a system is selected in Emergency System for the selected channel(s) in Digital or Capacity Plus channel(s).

This feature is enabled only when a MDC system is selected in TX Signaling System for the selected channel(s) in Analog channel(s).

This feature is disabled if 5 Tone Emergency Alarm Type is set to Disabled or RX Only is enabled.

3.55.1.30
Option Board

This feature enables or disables the option board capability on the channel.

When the option board capability on the channel is disabled, the option board itself may still function but may not interact with this channel's radio option board functionality. The option board must be installed in the radio else enabling this feature will be ineffective. The option board is connected through the MOTOTRBO Option Board interface to expand the capability of the radio. The option board interface is used by third party developers as part of the MOTOTRBO Application Developers Program to create a variety of applications, including enhancements on existing applications and also new applications other than those already available on the radio. Channels with the option board capability enabled can use up to six programmable buttons to toggle option board based functionalities on/off (Option Board Feature). This is a channel-wide feature.

3.55.1.31
Lone Worker

This feature enables Lone Worker on the radio.

The Lone Worker feature prompts an emergency to be raised if there has been no user activity for a predefined time. The Response Time resets with user activity. The Reminder Time begins when the Response Time expires. The Reminder Time determines how long it takes the radio waits before raising the emergency. User activity is defined as activation of any radio button or of the channel selector. This is a channel-wide feature.

NOTICE:
This feature is disabled when CPC Emergency System has not been selected.

In a 5 Tone channel, this feature is disabled if the 5 Tone Emergency Alarm Type is set to Disabled or the channel is RX Only.

3.55.1.32
Allow Talkaround

Ensures that the Receive parameters are used in place of the Transmit parameters when transmitting.

This feature enables communication between radios in close proximity without the use of a repeater, and is, therefore, particularly useful when the radios are in close proximity and the repeater is out of range. This feature can be toggled between Repeater or Talkaround mode, via a short or long

programmable button press (Repeater/Talkaround) or Talkaround (Utilities Menu) feature. This is a channel-wide feature.

NOTICE:
For MOTOTRBO Conventional radios on a Digital channel, the Transmit and Receive frequencies must be different for this feature to be enabled.

To disable this feature, the RX Signaling System and TX Signaling System must have the same values.

This feature is not editable and is disabled if RX Only (Conventional Channel) is enabled.

For MOTOTRBO Conventional radios on an Analog channel, at least one of the following Transmit and Receive parameters must be different for this feature to be enabled: Frequency, Squelch Type, DPL Code, DPL Invert, TPL Frequency, TPL Code and Signaling System.

For MOTOTRBO Conventional radios on an Analog channel, the channel must have its RX Signaling System feature set to an MDC System to send an MDC Emergency in Talkaround mode.

For 3600 Trunking capable radios on an Analog conventional channel, at least one of the following Transmit and Receive parameters must be different for this feature to be enabled: Frequency, Squelch Type, DPL Code, DPL Invert and TPL Setting.

This feature is not available in the Capacity Plus–Single-Site system.

This feature is disabled if Enhanced GNSS is enabled.

This feature is disabled when the Dual Capacity Direct Mode (DCDM) feature is enabled.

This feature is disabled if the Extended Range Direct Mode on page 768 is enabled.

This feature is applicable to 3600 Trunking capable radios and MOTOTRBO Conventional radios in Conventional mode only.

3.55.1.33
Phone Gateway

Defines whether the Repeater is used as a phone gateway for the configured timeslot.

Since this configuration is set on the timeslot (in Conventional Single Site and IPSC) through the digital personality and on per digital personality basis in Capacity Plus–Single-Site, the configuration is different for different digital channels/personalities. On the Capacity Plus–Single-Site Voice channel, the choices are None and Slot 1 & Slot 2. On the conventional digital channel, the choices are None, Slot 1, Slot 2, and Slot 1 & Slot 2, Slot 1 (Preconfigured) & Slot 2, Slot 1 & Slot 2 (Preconfigured).

NOTICE:
For Digital personalities, the choice Slot 1 & Slot 2 is only applicable when Enable (Preconfigured Call) is unchecked or not applicable.

For Digital personalities, the choices Slot 1 (Preconfigured) & Slot 2 and Slot 1 & Slot 2 (Preconfigured) is only applicable when Enable (Preconfigured Call) is checked.

This feature is supported in Digital mode only.

This feature is disabled if the Extended Range Direct Mode on page 768 is enabled.

This feature is is hidden when Digital or Digital Phone Patch feature is disabled.

3.55.1.34
IP Site Connect

This feature assigns the selected channel as an IP Site Connect enabled channel.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

This feature is disabled when the Dual Capacity Direct Mode (DCDM) feature is enabled.

3.55.1.35
MOTOTRBO Link

This checkbox allows the user to enable the MOTOTRBO Link feature for the repeater.

NOTICE: This field is only visible for digital channels in an IP Site Connect system and accessible only when IP Site Connect on page 775 is **Enabled**.

3.55.1.36
Per-Site RSSI Threshold (dBm)

This field allows the user to specify the RSSI Threshold to be used for this channel when it is acting as a site in an IP Site Connect system.

Range:

Maximum	Minimum	Increment
-60 dBm	-120 dBm	-1 dBm

NOTICE:

- This field is only applicable for Digital channels.
- This field is hidden when the IP Site Connect feature or the Digital feature is disabled.
- This field is greyed out when IP Site Connect is unchecked.
- This field is greyed out when Dual Capacity Direct Mode is checked.

3.55.1.37
System Controller Mode

This feature allows the user to enable or disable System Controller Mode.

NOTICE:
This feature is applicable for Digital channels only.

This feature is should be unchecked and disabled when Link Type is set to None or Master.

This feature is disabled if theExtended Range Direct Mode on page 768 is enabled.

This feature is disabled when IP Site Connect is set to Slot 1, Slot 2, or Slot 1 & Slot 2.

3.55.1.38
IP Site Connect Repeater

This field allows the user to select the Multi-Site Channel Configuration from None, Slot 1, Slot 2, or Slot 1 & Slot 2 for repeaters. This is a channel-wide feature.

None
Both slot 1 and slot 2 function in single site mode.

Slot 1
Only slot 1 functions in IP Site Connect mode.

Slot 2
Only slot 2 functions in IP Site Connect mode.

Slot 1 & Slot 2
Both slot 1 and slot 2 function in IP Site Connect mode.

NOTICE:
If Repeater Type is set to Single Site, this field should be set to None and greyed-out.

During cut, paste,drag, drop, write, or clone, if target archive does not support multi site, this feature should be set to None.

This feature is only applicable for digital channel.

For 1.5a+ releases, this feature is hidden when the IP Site Connect or the Satellite Receiver feature is disabled.

This feature is grey-out when System Controller Mode is enabled.

3.55.1.39

Messaging Delay (ms)

This feature sets the inter-repeater messaging delay based on the IP network configuration. This is a channel-wide feature.

Range:

Maximum	Minimum	Increment
510 ms	60 ms	30 ms

NOTICE:
This feature is disabled when IP Site Connect is disabled (unchecked) or when IP Site Connect is set to None.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

This feature is disabled when the Dual Capacity Direct Mode (DCDM) feature is enabled.

3.55.1.40

Messaging Delay (ms)

This feature sets the inter-repeater messaging delay based on the IP network configuration. This is a channel-wide feature.

60
The inter-repeater messaging delay is 60 ms.

90
The inter-repeater messaging delay is 90 ms. This is for channel wide.

150
The inter-repeater messaging delay is 150 ms. This is only for Capacity Max channel.

NOTICE:
This feature is disabled when IP Site Connect is set to None.

This feature is only applicable for 1.4+ releases.

For Digital channels, this feature is hidden if the Satellite Receiver and IP Site Connect features are disabled. This is applicable for 1.5+ releases only.

This feature is greyed-out when the System Controller Mode is enabled.

3.55.1.41

Repeater RSSI Threshold (dBm)

This threshold defines a level at which the repeater will not transmit due to interference.

For a multi-repeater trunked system this threshold also determines the level at which a repeater will temporarily remove itself from the system due to interference.

IP Site Connect Systems

The threshold should be set according to any license restrictions (for example FCC), increasing the level will make the repeater increasingly impolite to other systems.

Capacity Plus–Single-Site Systems and Capacity Plus–Multi-Site Trunked Systems

When this threshold is exceeded by an unwanted RF signal then the repeater will be temporarily removed from the system. When the interference falls below this threshold the repeater will return. This happens very rapidly.

Dealers should estimate the level of interference and set this level accordingly; setting the level too high will result in wanted signals not being received when interference is present, whereas setting the level too low will result in a loss of channel capacity. This is a channel-wide feature.

Range:

Maximum	Minimum	Increment
-40 dBm	-130 dBm	1 dBm

NOTICE:
This feature is disabled when IP Site Connect is set to None and System Controller Mode is unchecked.

This feature is applicable for 1.4+ releases only.

This feature must always be enabled for Capacity Plus–Single-Site system.

This feature is hidden on a Digital channel when the IP Site Connect or the Digital feature is disabled. This is ony applicable for 1.5+ releases.

When Capacity Plus–Single-Site or Capacity Plus–Multi-Site system is enabled, this field is displayed on a Capacity Plus–Single-Site Data and Voice channel.

3.55.1.42

IF Filter Type

IF Filter is required to reduce the interference from the adjacent channels.

This drop-down list allows the user to choose which type of IF Filter to use. Available choices are Wide (default) and Narrow. Select Narrow to improve the Adjacent Channel Selection (ACS) by 3-4 dB and degrade the sensitivity by 0.5 dB. It is recommended to select narrow IF filter if the adjacent channel separation is 12.5 KHz. This selection is applicable to digital channels only. Select Wide for most deployments (all analog and DMM channels use wide IF filter).

NOTICE:
This feature is applicable for Capacity Plus Voice and Capacity Plus Data personalities in digital mode only.

The recommended frequency tuning when the mobile, portable, or repeater is older than 2 years and the user selects Narrow IF filter.

3.55.1.43

Compressed UDP Data Header

This feature selects the type of compression protocol used for the UDP Data Header.

Selecting Advantage reduces delays in over-the-air data transmissions. However, when working with legacy radios that do not have the capability to handle compressed UDP data packets, this feature should be set to None. This drop-down list allows the user to select the compression to use for UDP data headers per channel.

3.55.1.44

Text Message Type

When creating a new or forwarding a text message, user must choose to send the text message type as Advantage or DMR Tier2 Text (DMR Standard) message.

When replying or re-sending a text message, the text message type of the original message will be followed. This drop-down list allows the user to choose which type of text message to use. This is a personality-wide feature.

Advantage
MSI advantage TMS.

DMR Standard
DMR Tier2 Text Message. This option is only for individual or group radio-to-radio calls. Do not configure contacts as PC Call, Dispatch Call. For Private Call or Group Call, ensure that the Route Type is not configured as Non-IP Peripheral or Option Board.

NOTICE: This feature is only applicable for Digital personalities.

3.55.1.45

Over-The-Air Battery Management

This check box allows the user to enable or disable the initial registration of Over-the-Air Battery Management data.

NOTICE:
This feature is only applicable for Digital personalities.

3.55.1.46

Default Call Priority Level

This field allows the user to set the default value for the call priority level for a Capacity Max Personality channel type.

The following selections are supported:

- **High**
- **Normal**

3.55.1.47

Channel Inhibit

Identifies if a channel is a valid or invalid channel.

If invalid, the channel must not be selected as a Revert Channel or added to a Scan List.

3.55.1.48
Fist Microphone Disable

This check box allows the user to disable or enable the fist microphone feature.

3.55.1.49
Telemetry VIO 1 GPO Level

This field allows the user to specify the pin level for Telemetry VIO 1.

When the user changes the channel, the radio automatically toggles the GPO pin according to the value set in this field. The available options are Default, High, and Low.

3.55.1.50
Telemetry VIO 2 GPO Level

This field allows the user to specify the pin level for Telemetry VIO 2.

When the user changes the channel, the radio automatically toggles the GPO pin according to the value set in this field. The available options are Default, High, and Low.

3.55.1.51
Telemetry VIO 3 GPO Level

This field allows the user to specify the pin level for Telemetry VIO 3.

When the user changes the channel, the radio automatically toggles the GPO pin according to the value set in this field. The available options are Default, High, and Low.

3.55.1.52
Telemetry VIO 4 GPO Level

This field allows the user to specify the pin level for Telemetry VIO 4.

When the user changes the channel, the radio automatically toggles the GPO pin according to the value set in this field. The available options are Default, High, and Low.

3.55.1.53
Telemetry VIO 5 GPO Level

This field allows the user to specify the pin level for Telemetry VIO 5.

When the user changes the channel, the radio automatically toggles the GPO pin according to the value set in this field. The available options are Default, High, and Low.

3.55.1.54
RX Only (Conventional Channel)

Configures the channel to receive only without any transmission capability.

All Transmit features for the channel will also be disabled, except GNSS Revert. This is a channel-wide feature.

NOTICE:
The channel must not be set as any Revert Channel (e.g. Emergency Revert Channel) or TX Designated Channel (e.g. the Scan TX Designated Channel).

This feature is not available in the Capacity Plus–Single-Site system.

This feature sets the Allow Talkaround to unchecked and make it not editable (if this feature is checked).

This feature makes all (except GNSS Revert) the Transmit fields under TX not editable (if this feature is checked).

This feature sets the Admit Criteria selections to Channel Free (if this feature is checked).

This feature disables the Copy button (if this feature is checked).

This feature sets the TX Signaling System selections to None (if this field is checked).

This feature sets the Contact Name selection to None (if this field is checked).

This feature sets the Emergency System to None (if this field is checked).

This feature is applicable to MOTOTRBO Conventional radios, 3600 Trunking capable radios, andMOTOTRBO SLR Series repeaters in Conventional mode only.

3.55.1.55
BSI Mode

This field allows the user to determine the BSI mode. Choices are "Analog" and "Digital BSI".

3.55.1.56
Channel Bandwidth (KHz)

Sets the channel bandwidth for the Transmit and Receive frequencies to either 12.5, 12.5/15, 20, 25/30 or 25.

This is a channel-wide feature.

NOTICE:
12.5/15, 25/30, and 20 KHz are only supported for selected models.

For UHF/VHF radios (NA region), radios with 20/25 KHz channel bandwidth will reset to 12.5 KHz.

In Digital mode, the channel bandwidth is fixed at 12.5 KHz and not RM configurable.

Programming of the radio to operate on 20/25 kHz channel spacing is not permitted and has been disabled in this application in compliance with the FCC Narrowbanding mandate for Part 90 VHF and UHF in the United States effective Jan. 01 2013. Please see readme file and Release Notes for more information.

This feature is applicable to 3600 Trunking capable radios in Conventional mode, MOTOTRBO Conventional radios, and MOTOTRBO SLR Series repeaters only.

3.55.1.57
Channel Bandwidth (KHz)

Sets the channel bandwidth for the Transmit and Receive frequencies to either 12.5, 12.5/15, 20, 25/30 or 25.

This is a channel-wide feature.

NOTICE:
12.5/15, 25/30, and 20 KHz are only supported for selected models.

For UHF/VHF radios (NA region), radios with 20/25 KHz channel bandwidth will reset to 12.5 KHz.

In Digital mode, the channel bandwidth is fixed at 12.5 KHz and not RM configurable.

Programming of the radio to operate on 20/25 kHz channel spacing is not permitted and has been disabled in this application in compliance with the FCC Narrowbanding mandate for Part 90 VHF and UHF in the United States effective Jan. 01 2013. Please see readme file and Release Notes for more information.

This feature is applicable to 3600 Trunking capable radios in Conventional mode, MOTOTRBO Conventional radios, and MOTOTRBO SLR Series repeaters only.

3.55.1.58
RF AGC (Conventional Channel)

Selects the type of Receive Frequency (RF) Automatic Gain Control (AGC) used for the channel. This feature is applicable to 3600 Trunking capable radios in Conventional mode only.

This is a channel-wide feature.

Disabled
The radio will not enable any software RF AGC algorithms.

Standard
The radio enables the standard software RF AGC algorithm.

Enhanced
The radio enables the enhanced software RF AGC algorithm.

3.55.1.59
Extended Range Direct

Extended Range Direct Mode is a conventional solution that extends the 12.5e direct mode range.

This field is only for SL Series repeaters.

3.55.1.60
Squelch

Filters incoming signals that are not strong enough to produce a clear transmission, thereby eliminating unwanted noise.

This feature adjusts the squelch threshold of an incoming transmission. This feature can be toggled between tight or normal squelch, via a short or long programmable button press (Tight/Normal Squelch) or Squelch (Utilities Menu). This is a channel-wide feature.

Normal
Unmutes to incoming transmission with a normal signal strength.

Tight
Unmutes to incoming transmission with a tight signal strength.

Specific
Allows the Squelch Level value to be invoked as opposed to either the Tight or Normal setting (applicable to Repeater only).

NOTICE:
This feature is applicable to 3600 Trunking capable radios,MOTOTRBO Conventional radios in Analog mode, and MOTOTRBO SLR Series repeaters in Conventional mode only.

3.55.1.61
Squelch Level

Provides more resolution (15 settings) to set the desired carrier squelch level to - as opposed to the two settings afforded by the tight and normal settings.

Range:

Maximum	Minimum	Increment
14	0	1

NOTICE:
This feature is applicable to 3600 Trunking capable radios,MOTOTRBO Conventional radios in Analog mode, and MOTOTRBO SLR Series repeaters in Conventional mode only.

This feature is enabled when Squelch is set to Specific.

This feature is supported in Analog mode only.

3.55.1.62
Wireline Mute Pin

Configures the Wireline Mute Pin (GPIO Index) for the channel.

For MTR3000 models, the choices are "None", "Pin #4", "Pin #15", "Pin #24", "Pin #8, #25", "Pin #10, #12", "Pin #21", and "Pin #5". For MOTOTRBO Repeater models, the choices are "None", "Pin #19", "Pin #21", "Pin #20", and "Pin #22".

3.55.1.63
Voice Emphasis

Enhances audio clarity for higher frequencies by applying an audio shaping filter to reduce noise in the radio signal.

The type of filter used depends on the option selection. If None is selected, no filter is applied to the signal. Pre-emphasis (Pre) is used to filter the transmit signal and De-emphasis (De) is used to filter the receive signal. This is a channel-wide feature.

For MOTOTRBO conventional radios and MOTOTRBO SLR Series repeaters, the following options are supported:

None
Neither receive nor transmit audio filtering is applied.

De & Pre
Receive and transmit audio filtering are enabled.

For 3600 Trunking capable radios in conventional mode and MOTOTRBO SLR Series repeaters, the following options are supported:

None
Neither receive nor transmit audio filtering is applied.

De & Pre
Receive and transmit audio filtering are enabled.

De Only
Receive audio filtering are enabled.

Pre Only
Transmit audio filtering are enabled.

NOTICE:
This feature is set to None and is unavailable if Audio Type is set to Flat Unsquelch in MOTOTRBO Repeaters/MOTOTRBO SLR Series repeaters or RX & TX Flat in MTR3000 base radio/repeater/MOTOTRBO SLR Series repeaters.

This feature is hidden on a Dynamic Mixed Mode Channel when the Dynamic Mixed Mode Feature is disabled. This applies to MOTOTRBO radios 1.6A+ releases, MOTOTRBO SLR Series repeaters 1.0+ releases, and MOTOTRBO 2.0+ releases.

This feature is applicable to 3600 Trunking capable radios, MOTOTRBO Conventional radios, MOTOTRBO SLR Series repeaters, and MTR3000 base radio/repeater in Conventional mode only.

3.55.1.64
ARTS

The Auto-Range Transpond System (ARTS) feature is used to inform users when a radio gets out of range from contact with another ARTS-equipped radio.

Disabled
The radio disables ARTS.

TX
The radio transmits polling signals only to connect with other radios. The radio cannot notify the user of its own range status.

RX
The radio receives polling signals only to be notified when in range or out of range. The radio can notify the user of its own range status.

RX & TX
The radio transmits and receives polling signals, connects with other radios and can be notified of its own range status.

NOTICE:
The TX and RX & TX options are not supported if RX Only is enabled.

This feature is disabled if RX Squelch Type or TX Squelch Type is set to CSQ.

This feature is supported in Analog mode only.

3.55.1.65
Compressed UDP Data Header

This feature selects the type of compression protocol used for the UDP Data Header.

Selecting Advantage reduces delays in over-the-air data transmissions. However, when working with legacy radios that do not have the capability to handle compressed UDP data packets, this feature should be set to None. This drop-down list allows the user to select the compression to use for UDP data headers per channel.

3.55.1.66
Voice List

This field allows the user to select Capacity Plus Voice List from the choices of all existing Capacity Plus Voice Lists.

NOTICE:

- This is only applicable for Paradise 1.5 release and above.
- This field is only applicable to a Capacity Plus System channel type.

3.55.1.67
Site List

This field allows the user to select Capacity Plus–Multi-Site Site List from all existing Capacity Plus–Multi-Site Site Lists.

NOTICE: This field is only applicable to a Capacity Plus–Multi-Site System Personality.

3.55.1.68
Data List

This field allows the user to select Capacity Plus Data List from the choices of "None" and all existing Capacity Plus Data Lists.

NOTICE:

- This is only applicable for 1.5 release and above.
- This field is only applicable to a Capacity Plus System channel type.

3.55.1.69
Audio Enhancement

Provides additional audio processing to reduce undesirable audio artifacts and improve audio quality.

This is a channel-wide feature.

Companding
The Companding algorithm reduces noise due to the channel characteristics by compressing the dynamic range of the audio at the transmitter and expanding the dynamic range of the audio at the receiver. This attenuates the low level additive channel noise since it is only expanded, not compressed.

Flutter Fighter
The Flutter-Fighter is an FM noise canceling algorithm which reduces noise due to the channel characteristics by eliminating audio pops caused by FM spikes during channel fading in high Signal to Noise ratio (S/N) conditions.

Hear Clear
Hear Clear is designed to provide the maximum level of audio quality by reducing low-level additive noise as well as the FM spikes due to channel fading. The use of this option enables both the Companding algorithm and the Flutter-Fighter algorithm. Hear Clear is most effective when used on 900 MHz channels or 800 MHz channels with 12.5 KHz channel bandwidth.

None

Additional audio processing is disabled.

NOTICE:
For MOTOTRBO repeater models and MOTOTRBO SLR Series repeaters, the choice Companding is removed when Audio Type is set to RX & TX Flat for MTR3000 base radio/repeater/MOTOTRBO SLR Series repeaters or Flat Unsquelch for MOTOTRBO repeaters/MOTOTRBO SLR Series repeaters.

For MOTOTRBO subscriber models and MOTOTRBO 2.0 models, the choice Companding is removed when RX Audio Type is set to Flat Unsquelch.

For MOTOTRBO repeater models and MOTOTRBO SLR Series repeaters, the choice Hear Clear is removed when Audio Type is set to RX & TX Flat for MTR3000 base radio/repeater/MOTOTRBO SLR Series repeaters or Flat Unsquelch for MOTOTRBO repeaters/MOTOTRBO SLR Series repeaters.

This feature is set to a default value if the selected value becomes invalid because of Note 1-4.

This feature is greyed-out when the choice None is the only choice that is currently valid.

Similar audio enhancement settings should be used by all radios assigned to a Talkgroup. Specifically, if Hear Clear is enabled on the transmitting radio, it should also be enabled on all of the receiving radios.

Hear Clear can effectively inter-operate with legacy radios which only support Companding. On legacy radios which support multiple Companding algorithms, some trial-error may be needed to determine which legacy algorithm performs the best with Hear Clear.

The Flutter Fighter option can be used when the transmitting radio has no audio enhancements enabled (i.e. when the transmitting radio has Hear Clear and Companding disabled).

For MTR3000 base radio/repeater, the compressor function for Repeater Mic path in Companding cannot be supported if Audio Type is set to TX Flat Only.

For MTR3000 base radio/repeater, the expander function for Repeater Speaker path in Companding cannot be supported if Audio Type is set to RX Flat Only.

For MTR3000 base radio/repeater, Companding and Hear Clear is not supported if Audio Type is set to RX and TX Flat.

In 800/900 MHz MTR3000 base radio/repeater, Companding is only for the microphone/speaker path. Companding will not take effect in the repeat path.

For 3600 Trunking capable radios in Conventional mode, Companding and Hear Clear is not supported if Audio Type is set to Flat Unsquelch.

Starting from MOTOTRBO 2.0 radios, this feature is disabled if Audio Type is set to Flat Unsquelch.

3.55.1.70
MPT1327

This check box allows the user to enable/disable the support of MPT1327 analog trunking feature on an analog conventional channel.

NOTICE:
This feature is available in MOTOTRBO SLR Series repeaters only.

3.55.1.71

Scrambling Enable

Allows you to enable or disable the Scrambling feature.

NOTICE: The following are the recommended configurations for MDC signaling to avoid false detection when scrambling is enabled:

- DOS Criteria Type = 1200 Hz and 1800 Hz
- DOS Auto Mute Duration (ms) = 0

3.55.1.72

Window Size

Allows the user to configure the Window Size for an Enhanced GNSS channel.

Range:

Maximum	Minimum	Increment
10	1	1

NOTICE:
This feature is editable if Enhanced GNSS is editable and enabled.

This feature is disabled when the Dual Capacity Direct Mode (DCDM) feature is enabled.

This feature is disabled if the Extended Range Direct Mode on page 768 is enabled.

This feature is supported in Digital mode only.

3.55.1.73

Phone System

Associates any available Phone System to the channel for use when initiating or receiving a phone call on a conventional channel.

Selecting the None option disables the user from initiating or receiving phone calls on this channel. This is a channel-wide feature.

NOTICE:
This feature is disabled when the Dual Capacity Direct Mode (DCDM) feature is enabled.

This feature is disabled and set to **None** if the Extended Range Direct Mode on page 768 is enabled.

This feature is supported in Digital mode only.

3.55.1.74

Option Board Trunking

This feature enables or disables the option board trunking capability on the channel.

This feature prevents non-supported conventional features from being used while the radio is using the option board trunking capability (i.e. Scan is disabled automatically). The option board must be installed in the radio; otherwise enabling this feature will be ineffective. The option board is connected through the MOTOTRBO Option Board interface to expand the capability of the radio. The option board interface is used by third party developers as part of the MOTOTRBO Application Developers Program to create a variety of applications, including enhancements on existing applications and also new applications other than those already available on the radio. Channels with the option board capability

enabled can use up to six programmable buttons to toggle option board based functionalities on/off (Option Board Feature). This is a channel-wide feature.

NOTICE:
This feature is disabled if Option Board is disabled (unchecked).

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.55.1.75

Beacon Interval (ms)

This feature specifies how often the radio sends out the beacon signal for Capacity Plus.

In a Capacity Plus–Single-Site system, this feature value should be higher in the subscriber than the repeater. In a Capacity Plus–Multi-Site system, this feature value should be the same in both the subscriber and repeater. This is a channel-wide feature.

Range:

Maximum	Minimum	Increment
4800 ms	960 ms	480 ms

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.55.1.76

Rest Channel Acquisition TOT (min)

This feature determines the interval for tone to sound to indicate to the radio user when a radio is "lost" or out of range from the Capacity Plus–Single-Site system.

A "lost" radio is unable to determine which is the rest channel it should be on. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
20 min	0 min	1 min

NOTICE:
This feature is applicable for 1.5+ releases only.

This feature is applicable for Capacity Plus–Single-Site System and Capacity Plus–Multi-Site System Personalities only.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.55.1.77

Auto Roam

Configures the roaming capability in a Capacity Plus–Multi-Site system.

If disabled, the radio will not be able to roam to another Capacity Plus–Multi-Site site when moving from one site to another.

NOTICE:
This feature is applicable for Capacity Plus–Multi-Site System Personality only.

This feature is supported in Digital mode only.

3.55.1.78

Preference Level

This feature adjusts the usage preference level for the repeaters of a Capacity Plus–Single-Site/ Capacity Plus–Multi-Site site.

1 identifies the highest preference level, or most preferred repeater to be used, while, 10 identifies the lowest preference level, or least preferred repeater to be used.

Range:

Maximum	Minimum	Increment
10	1	1

NOTICE:
This feature is only applicable for Capacity Plus–Single-Site and Capacity Plus–Multi-Site Voice personalities in 1.5a+ releases only.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.55.1.79

Slot 1 Channel ID

This field displays the Slot 1 Channel ID value.

NOTICE:

- This is only applicable for Paradise 1.5, Bahama 1.0 releases and above.
- This field is only applicable for Capacity Plus–Single-Site voice and Capacity Plus–Multi-Site voice & data channel types.

3.55.1.80

Slot 2 Channel ID

This field displays the Slot 2 Channel ID value.

NOTICE:

- This is only applicable for Paradise 1.5, Bahama 1.0 releases and above.
- This field is not editable.
- The value in the field is must be 1 greater than the value of **Slot 1 Channel ID**.
- This field is only applicable for Capacity Plus–Single-Site Voice, Capacity Plus–Multi-Site Voice, and Capacity Plus–Multi-Site Data personalities.

3.55.1.81

Signaling Pre-emphasis/De-emphasis

When enabled, provides a filtering algorithm, used by the Audio Signaling Filter Integrated Circuit (ASFIC), to reduce the signal noise ratio in two-way radio RF systems.

Pre-emphasis is used to filter the transmit signal and De-emphasis is used to filter the receive signal.

NOTICE:
This feature is supported in Analog mode only.

3.55.1.82
Wide Area

Configures a Capacity Plus–Multi-Site Data Revert channel to be wide area.

NOTICE:
This feature is only applicable to Capacity Plus–Multi-Site Data personalities.

If a wide area data repeater requires IP connection with other site-wide area data repeaters in the Capacity Plus–Multi-Site system then it must have the same Slot 1 Channel ID .

Slot 1 Channel ID value must be unique for each data repeater at a site.

This feature is supported in Digital mode only.

3.55.1.83
Sensor Enable

This field enabled sensor data functionality per individual personality configuration.

3.55.2
Enhanced GNSS (Conventional Personality)

The **Enhanced GNSS** section of the Conventional Personality set contains the following fields:

3.55.2.1
Enable (Slot 1)

Configures the Enhanced GNSS feature on Repeater Slot 1.

When this feature is enabled on the Repeater slot, then the slot is responsible for scheduling the GNSS or other scheduled updates of all the subscribers. This is a slot-wide feature so each slot can be configured independently. In a Capacity Plus–Single-Site data channel, one slot can be used for GNSS and other scheduled data, and the other slot can be used for non-GNSS or other non-scheduled data. This also applies for Single Site and IP Site Connect modes.

NOTICE:
This feature is supported in Digital mode only.

3.55.2.2
Enable (Slot 2)

Configures the Enhanced GNSS feature on Repeater Slot 2.

When this feature is enabled on the Repeater slot, then the slot is responsible for scheduling the GNSS or other scheduled updates of all the subscribers. This is a slot-wide feature so each slot can be configured independently. In a Capacity Plus–Single-Site data channel, one slot can be used for GNSS and other scheduled data, and the other slot can be used for non-GNSS or other non-scheduled data. This also applies for Single Site and IP Site Connect modes.

NOTICE:
This feature is supported in Digital mode only.

3.55.2.3
Enhanced GNSS Window Size (Slot 1)

Configures the Window Size for the Repeater Slot 1. This is a slot-wide feature.

Range:

Maximum	Minimum	Increment
10	1	1

NOTICE:
This feature can only be used by Location CSBK Data.

This feature is only be editable if Enable (Slot 1) is checked.

This feature is hidden when the Digital or Enhanced GNSS feature is disabled. This is only applicable to a digital channel.

This feature is hidden when the Digital, Capacity Plus–Single-Site, or Enhanced GNSS feature is disabled. This is only applicable to a Capacity Plus–Single-Site data channel.

This feature is hidden when the Digital, Capacity Plus–Multi-Site, or Enhanced feature is disabled. This is only applicable to a Capacity Plus–Multi-Site data channel.

If the Window Size is configured as 1 or 2, user can use the updated rate of 7.5s/15s/30s/1min/2min.

If the window size is configured as 5, 6, 7, 8, 9 or 10, user can use the updated rate of 30s/1min/2min/4min/8min.

Window Size option 1 can only be configured if the system are using the MOTOTRBO Network Interface Service (MNIS) wireline mode.

The Window Size of the subscriber units must be the same with the Repeater to avoid collision and loss of GNSS data transmission functionality.

This feature is supported in Digital mode only.

3.55.2.4
Enhanced GNSS Window Size (Slot 2)

Allows the user to configure the Window Size of repeater Slot 2 for an Enhanced GNSS channel.

User can configure Window Size option 1 and 2 if the CSBK Data feature is used. Window Size option 1 can only be configured if the system are using the MOTOTRBO Network Interface Service (MNIS) wireline mode. This feature is applicable for single-site and IP Site Connect modes in Digital conventional mode. This feature is applicable for Capacity Plus–Single-Site Data Channels in Capacity Plus–Single-Site mode and Capacity Plus–Multi-Site Data channels. It is not applicable for the repeater Dynamic Mixed Mode channel.

Range:

Maximum	Minimum	Increment
10	1	1

NOTICE:
This feature is only be editable if Enable (Slot 2) is checked.

This feature is hidden when the Digital or Enhanced GNSS feature is disabled. This is only applicable to a digital channel.

This feature is hidden when the Digital, Capacity Plus–Single-Site, or Enhanced GNSS feature is disabled. This is only applicable to a Capacity Plus–Single-Site data channel.

This feature is hidden when the Digital, Capacity Plus–Multi-Site, or Enhanced GNSS feature is disabled. This is only applicable to a Capacity Plus–Multi-Site data channel.

The choices "1" and "2" shall be applicable only for 13.00.XX+ codeplug versions.

If the Window Size is configured as 1 or 2, user can use the updated rate of 7.5s/15s/30s/1min/2min.

If the Window Size is configured as 5, 6, 7, 8, 9 or 10, user can use the updated rate of 30s/1min/2min/4min/8min.

For codeplug version 13.00.XX+, this feature is enabled if Enable (Slot 2) is enabled.

For Capacity Plus–Single-Site channel, this feature is hidden when the Digital, Capacity Plus–Single-Site, or Enhanced GNSS feature is disabled.

For Capacity Plus–Multi-Site data channel, this feature is hidden when the Digital, Capacity Plus–Multi-Site, or Enhanced GNSS feature is disabled.

This feature is supported in Digital mode only.

3.55.2.5
Periodic Window Reservation (Slot 1)

Specifies the percentage of windows that can be reserved for periodic updates for the Enhanced GNSS Slot 1.

The available choices are None, 45%, 60%, 75% and 90%. If the user chooses 90%, it means that 90% of the total available windows are reserved for periodic updates and the remaining 10% are reserved for a one-time updates. If there is a high call volume on the selected channel, the user should not run at 90% capacity, instead use 60% or 45% capacity. This is a slot-wide feature.

NOTICE:
This feature is enabled if Enable (Slot 1) is enabled.

The None choice is applicable only when IP Site Connect is set to Slot 1 or Slot 1 & Slot 2.

In IP Site Connect and Capacity Plus–Multi-Site modes, when this feature is set to 45%, 60%, 75%, or 90%, it will configure the slot as the Scheduler. When the feature is set to None, it will configure the slot as the Slave. There should be one Scheduler for the Enhanced GNSS feature in an IP Site Connect System.

This feature is supported in Digital mode only.

3.55.2.6
Periodic Window Reservation (Slot 2)

Specifies the percentage of windows that can be reserved for periodic updates for the Enhanced GNSS Slot 2.

The available choices are None, 45%, 60%, 75% and 90%. If the user chooses 90%, it means that 90% of the total available windows are reserved for periodic updates and the remaining 10% are

reserved for a one-time updates. If there is a high call volume on the selected channel, the user should not run at 90% capacity, instead use 60% or 45% capacity. This is a slot-wide feature.

NOTICE:
This feature is enabled if Enable (Slot 2) is enabled.

The None choice is applicable only when IP Site Connect is set to Slot 2 or Slot 1 & Slot 2.

In IP Site Connect and Capacity Plus–Multi-Site modes, when this feature is set to 45%, 60%, 75%, or 90%, it will configure the slot as the Scheduler. When the feature is set to None, it will configure the slot as the Slave. There should be one Scheduler for the Enhanced GNSS feature in an IP Site Connect and Capacity Plus–Multi-Site Systems.

This feature is supported in Digital mode only.

3.55.2.7
Shared Channel Frequency (Slot 1)

Configures a repeater slot 1 to enable a shared channel frequency. This is a personality-wide feature.

NOTICE:
This feature is enabled if repeater slot is configured for Enhanced GNSS.

This feature is hidden when the user disables the Digital or Enhanced GNSS feature. This dependency is only applicable to a Digital Channel.

This feature is hidden when the user disables the Digital, Capacity Plus–Single-Site, or Enhanced GNSS feature. This dependency is only applicable to a Capacity Plus–Single-Site Data Channel.

This feature is hidden when the user disables the Digital, Capacity Plus–Multi-Site, or Enhanced GNSS feature. This dependency is only applicable to a Capacity Plus–Multi-Site Data channel.

This feature is enabled if Periodic Window Reservation (Slot 1) is not set to None.

This feature is supported in Digital mode only.

3.55.2.8
Shared Channel Frequency (Slot 2)

Configures a repeater slot 2 to enable a shared channel frequency. This is a personality-wide feature.

NOTICE:
This feature is enabled if repeater slot is configured for Enhanced GNSS.

This feature is hidden when the user disables the Digital or Enhanced GNSS feature. This dependency is only applicable to a Digital Channel.

This feature is hidden when the user disables the Digital, Capacity Plus–Single-Site, or Enhanced GNSS feature. This dependency is only applicable to a Capacity Plus–Single-Site Data Channel.

This feature is hidden when the user disables the Digital, Capacity Plus–Multi-Site, or Enhanced GNSS feature. This dependency is only applicable to a Capacity Plus–Multi-Site Data channel.

This feature is enabled if Periodic Window Reservation (Slot 2) is not set to None.

This feature is supported in Digital mode only.

3.55.3
RX/TX (Conventional Personality)

The **RX/TX** section of the Conventional Personality set contains the following fields:

3.55.3.1

RX Frequency (MHz) (Conventional Channel)

Sets a frequency (in MHz) on which the signal is received for the current channel. This is a channel-wide feature.

NOTICE:
When the Spain Band Frequency Range feature is enabled in the application, this feature will not accept any values except for the frequencies in the bands that are permitted in Spain (146-174MHz for BHF or 406.1-430 MHz and 440-470 MHz for UHF). When the Spain Band Frequency Range feature is disabled in the application, this feature accepts values that are outside of the Spain permitted bands.

The feature is not available in the Capacity Plus–Single-Site system Channel.

This feature is hidden on a Dynamic Mixed Mode Channel when the Dynamic Mixed Mode Feature is disabled. This applies for MOTOTRBO 1.6A+ and MOTOTRBO 2.0+ releases.

When adding a channel in MTR3000 repeaters, this feature's value is set to a minimum RX Frequency of the band.

The range of frequencies that can be set depends on the radio's band.

For Digital Mode, MOTOTRBO does not support the configuration of a direct mode channel that has different TX and RX frequencies. When TX and RX frequencies are different, the channel is defined as a repeater channel and the MOTOTRBO radio expects to communicate with a repeater.

For 3600 Trunking capable radios, this feature is disabled until Channel Bandwidth (KHz) is selected when multiple channels are selected.

When the Canada Full Frequency Range feature is enabled in the application, this feature accepts all the values in the NPSPAC channels (i.e. 806-809 MHz, 821-824 MHz, 851-854 MHz, 866-869 MHz) for all radio models. When the Canada Full Frequency Range feature is disabled in the application, this feature will not accept any values in NPSPAC channel except for the mutual aid channel frequencies.

For the models except for MTR3000 repeaters, if Canada Full Frequency Range is disabled, the value in this feature does not accept the values in NPSPAC channel except the mutual aid channel frequencies.

This feature is applicable to MOTOTRBO Conventional radios, 3600 Trunking capable radios, andMOTOTRBO SLR Series repeaters in Conventional mode only.

3.55.3.2

RX Squelch Type

Sets the type of decoding needed for the radio to receive a call on the channel.

The options are Carrier Squelch (CSQ), Tone Private Line (TPL) and Digital Private Line (DPL). This feature allows for more privacy on a frequency. This is a channel-wide feature.

NOTICE:
CSQ based repeat is not supported in Dynamic Mixed Mode.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Analog mode and 3600 Trunking capable radios in Conventional mode only.

3.55.3.3

RX DPL Code

This is the designated digital code received when a Digital Private Line (DPL) coded transmission is received on the channel.

The DPL code is a three-digit octal number. This is a channel-wide feature.

NOTICE:
The Receive Squelch Type feature must be set to DPL.

Only the 83 EIA/TIA-603 standard codes are supported. Motorola and non-standard codes are not supported in these radios.

This feature is applicable to 3600 Trunking capable radios in Conventional mode only.

3.55.3.4
RX DPL Code (Octal)

This is the designated digital code received when a Digital Private Line (DPL) coded transmission is received on the channel.

The DPL code is a three-digit octal number. This is a channel-wide feature.

Range:

Maximum	Minimum	Increment
777	000	1 (Octal)

NOTICE:
The Receive Squelch Type feature must be set to DPL.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Analog mode only.

3.55.3.5
RX DPL Invert

Causes the radio to invert the Digital Private Line (DPL) code upon receiving the signal. Inverted codes allow for compatibility with the equipment that requires it.

This is a channel-wide feature.

NOTICE:
The Receive (RX) Squelch Type feature must be set to DPL.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Analog mode and 3600 Trunking capable radios in Conventional mode only.

3.55.3.6
RX TPL Frequency (Hz)

This is the designated frequency received when a Tone Private Line (TPL) encoded transmission is received on this channel.

The TPL frequency is modulated into the carrier frequency. This is a channel-wide feature.

Range:

Maximum	Minimum	Increment
255.0 Hz	67.0 Hz	0.1 Hz

NOTICE:
The Receive (RX) Squelch Type feature must be set to TPL.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Analog mode only.

3.55.3.7
RX TPL Code

This is a code representing a specific tone.

This tone is received when a Tone Private Line (TPL) encoded transmission is received on this channel. The TPL codes are predefined in Radio Management . When setting this field, the TPL Frequency is automatically set to the frequency corresponding to the selected code. This is a channel-wide feature.

NOTICE:
The Receive (RX) Squelch Type feature must be set to TPL.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Analog mode only.

3.55.3.8
RX Signaling System

Associates any available MDC signaling system and Quick Call II signaling system to be used during reception.

Any available MDC system and Quick Call II system may be associated with the channel. Selecting None disables the user from receiving any MDC signaling and Quick Call II signaling related data, and disables MDC and Quick Call II related features (such as MDC Emergency and Call Alert) on this channel. This is a channel-wide feature.

NOTICE:
Configure the MDC Signaling System before selecting it or the default will be used.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.55.3.9
RX TPL Setting

Allows the user to select a TPL setting from a list of standard TPL frequency choices.

This frequency is a designated frequency received when a Tone Private Line (TPL) encoded transmission is received on this channel. The TPL frequency is modulated into the carrier frequency. This is a personality-wide feature.

NOTICE:
The Receive (RX) Squelch Type feature must be set to TPL.

Only the 83 EIA/TIA-603 standard codes are supported. Motorola codes and non-standard codes are not supported in these radios.

This feature is applicable to 3600 Trunking capable radios only.

3.55.3.10
RX Ref Frequency

Selects the Reference Frequency used when receiving on the current channel.

The reference frequency can be shifted to allow the radio to operate on channel frequencies that would otherwise be blocked by internally generated spurious signals. Internally generated spurious signals would appear as silent carriers on certain channel frequencies. Shifting the reference frequency allows these permanent signal carrier to be shifted to unused frequencies so that the desired channel frequencies can still be used. The options are Default, 5.6MHz or 8.4MHz for UHF band radios. As for VHF band radios, the options are Default, 3.36MHz or 4.2MHz. For other bands radios, the option is set to Default and is not programmable. This is a channel-wide feature. The radio as it is shipped is compliant with all RTTE regulations. Changing the reference to these frequencies will impact the

radio's performance specifications and could result in non-compliance with the RTTE requirements. Conformity to the local regulatory standards must be verified by the person/organization applying this change.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios only.

3.55.3.11
Signaling Squelch

Sets the rule determining when the radio unmutes to receive Signaling System data. This is a channel-wide feature.

And
Unmutes when the current channel's Private Line Unmute Rule is satisfied.

Or
Unmutes either when the current channel's Private Line Unmute Rule is satisfied or when a voice call is detected.

NOTICE:
The Unmute Rule selected applies only to the detection of voice calls (audio), not data.

This feature is enabled only if the Receive Signaling System is set to Quik-Call II or MDC.

Starting from MOTOTRBO 2.0 radios, this feature is enabled only if the Receive Signaling System is not set to None.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.55.3.12
Unmute Rule

Sets the rule that determines when the radio unmutes its speaker to receive audio or data. This is a channel-wide feature.

Std Unmute, Mute
Unmutes when a proper Private Line (PL) code is detected, and mutes on the loss of the PL code.

And Unmute, Mute
Unmutes when a proper Private Line (PL) code and a Carrier Squelch is detected, and mutes on the loss of the PL code.

And Unmute, Or Mute
Unmutes when a proper Private Line (PL) code and a Carrier Squelch is detected, and mutes on the loss of the proper PL code, or the loss of the Carrier Squelch.

NOTICE:
The Receive Squelch Type feature is not set to Carrier Squelch (CSQ).

This feature is applicable to MOTOTRBO Conventional radios in Analog mode and 3600 Trunking capable radios in Conventional mode only.

3.55.3.13
Emergency Alarm Indication

Determines if audio and visual indication is given by the radio when an emergency alarm is received.

If the check box is unchecked, the radio displays nothing when it receives an emergency alarm. This is a channel-wide feature.

NOTICE:
This feature is disabled when the Option Board Trunking feature is enabled (checked).

This feature is applicable to MOTOTRBO Conventional radios for Display model only.

3.55.3.14
Emergency Alarm Ack

Determines if the radio is allowed to acknowledge an emergency alarm. This is a channel-wide feature.

NOTICE:
It is recommended that only a single radio on the group be programmed to acknowledge emergency alarms. This check box should typically only be checked on the dispatchers radio.

The Emergency Alarm Indication feature must be enabled.

This feature is applicable to MOTOTRBO Conventional radios for Display model only.

3.55.3.15
Emergency Call Indication

Determines if a visual indication is given by the radio when an emergency call is received. This is a channel-wide feature.

NOTICE:
This feature is disabled when the Option Board Trunking feature is enabled (checked).

This feature is applicable for MOTOTRBO Conventional radios for Display model only.

3.55.3.16
Emergency Call Decode Tone

This field allows the user to enable or disable the Emergency Call Decode Tone.

NOTICE:

- This feature is only applicable for Analog, Digital, Capacity Plus–Single-Site system, and Capacity Plus–Multi-Site system personalities.
- This feature is greyed out when Emergency Call Indication check box is unchecked.

3.55.3.17
PL for Data

This feature enables or disables the usage of Private Line (PL) code before signaling data can be received on the channel. This is a channel-wide feature.

NOTICE:
The Receive Squelch Type feature is set to either Tone Private Line (TPL) or Digital Private Line (DPL).

The Receive Signaling System feature is not set to None.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.55.3.18
Group List

Associates any available RX Group List to the channel for reception.

The user can listen to any Group in this list when there is any activity on it and talk back within the Group Call hang time. This is also known as a Group Scan. Selecting the None option disables the user from receiving any Group Calls on this channel, except when the Call ID is the same as the Call ID of the transmit member. The Call ID from the Contact Name is automatically added to the RX Group List on this channel by default. This allows the user to receive this call, even though this feature is set to None. This is a channel-wide feature.

NOTICE:
This feature is disabled when the Option Board Trunking feature is enabled (checked).

This feature is applicable for Digital and Capacity Plus–Single-Site System Personalities only.

Configure the RX Group List under the RX Group Lists folder before selecting it or the default will be used.

This feature is useful if the user wants to receive calls from multiple groups.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.55.3.19 Squelch Mode

Configures the squelch mode which uses the 5 Tone tones to determine the radio un-muting requirement on a 5 Tone channel. This is a channel-wide feature.

CSQ
Unmutes to all incoming channel voice. (Available when the Squelch Type is set to CSQ)

Tone
Unmutes only when the 5 Tone tone matches. (Available when the Squelch Type is set to CSQ)

PL
Unmutes only when TPL/DPL code matches. (Available when the Squelch Type is set to DPL or TPL)

PL & Tone
Unmutes when TPL/DPL code matches, as well as 5 Tone tone matches. (Available when the Squelch Type is set to DPL or TPL)

NOTICE:
This feature is supported in Analog mode only.

3.55.3.20 PL Override

When enabled, the radio ignores PL checking for un-muting in these scenarios:

- PL/Talkgroup Detect GPIO pin level setting
- Auto Reset Timer restart, and
- Squelch mode in monitor state

This is a channel-wide feature.

NOTICE:
This feature is supported in Analog mode only.

3.55.3.21 Auto Reset Mode

On reception of a selective call or upon de-keying, the radio enters into the Auto Reset mode in which certain squelch requirements are defeated.

On entering into the Auto Reset mode, the auto reset timer will be started. The radio resets to the previous Squelch Mode on expiration of the auto reset timer. This feature determines how the radio resets in the Auto Reset mode. This is a channel-wide feature.

Disabled
The auto reset timer will not be started and auto reset mode will not be entered.

Carrier Override
The auto reset timer will be started and stopped by timer expiration or monitor button press. The timer will also be restarted if carrier is detected while the timer is still active.

Carrier Independent
The auto reset timer will be started and stopped by timer expiration or monitor button press.

Manual Override
The auto reset timer will not be started. The radio will stay in the auto reset mode until the monitor button is pressed.

NOTICE:
This feature is supported in Analog mode only.

3.55.3.22
Offset (MHz)

Creates a Transmit Frequency from the Receive Frequency with an added Offset value.

This ensures that a radio's offset is consistent with the repeater's offset. A user may enter up to a maximum of 11 digits or characters, including the decimal point and negative sign (e.g. -12.025). Clicking on the Copy button will populate the Transmit side. This is a channel-wide feature.

NOTICE:
This feature is not available in the Capacity Plus–Single-Site system.

This feature is disabled when the Dual Capacity Direct Mode (DCDM) feature is enabled.

This feature is applicable to 3600 Trunking capable radios in Conventional mode, MOTOTRBO Conventional radios, and MOTOTRBO SLR Series repeaters only.

3.55.3.23
Copy

Adds the Offset to the Receive Frequency to generate the Transmit Frequency.

For an Analog channel, this feature also copies all the Receive parameters, i.e. features inside the RX box such as the Frequency (MHz), Squelch Type, Digital Private Line (DPL) Code (Octal), DPL Invert, Tone Private Line (TPL) Frequency (Hz), TPL Code and Signaling System to the Transmit side. For a

Digital channel, the RX box has only the Receive Frequency (MHz) feature, therefore only this is copied to the Transmit side. This is a channel-wide feature.

NOTICE:
This feature is disabled when the Dual Capacity Direct Mode (DCDM) feature is enabled.

This feature automatically adds the value from Offset (MHz) to RX Frequency (MHz) (Conventional Channel), when copying the value from RX Frequency (MHz) (Conventional Channel) to TX Frequency (MHz) (Conventional Channel).

This feature verifies that the resultant frequency value is within range, when copying the RX frequency to TX frequency, after applying the Offset (MHz).

This feature is not available in the Capacity Plus–Single-Site system Channel.

This feature is disabled for multiple selection. To enable multiple selection, change the value in RX Frequency (MHz) (Conventional Channel) from blank to a value. This is available for subscriber models only.

This feature is applicable to MOTOTRBO Conventional radios and 3600 Trunking capable radios in Conventional mode only.

3.55.3.24

TX Frequency (MHz) (Conventional Channel)

Sets a frequency (in MHz) on which a signal is transmitted for the current channel. This is a channel-wide feature.

NOTICE:
When the Spain Band Frequency Range feature is enabled in the application, this feature will not accept any values except for the frequencies in the bands that are permitted in Spain (146-174MHz for BHF or 406.1-430 MHz and 440-470 MHz for UHF). When the Spain Band Frequency Range feature is disabled in the application, this feature accepts values that are outside of the Spain permitted bands.

The feature is not available in the Capacity Plus–Single-Site system Channel.

When adding a channel in MTR3000 repeaters, this feature's value is set to a minimum TX Frequency of the band.

This feature is hidden on a Dynamic Mixed Mode Channel when the Dynamic Mixed Mode Feature is disabled. This applies for MOTOTRBO 1.6A+ and MOTOTRBO 2.0+ releases.

The range of frequencies that can be set depends on the radio's band.

For MOTOTRBO Conventional radios in Digital mode, MOTOTRBO does not support the configuration of a direct mode channel that has different TX and RX frequencies. When TX and RX frequencies are different, the channel is defined as a repeater channel and the MOTOTRBO radio expects to communicate with a repeater.

The RX Only feature must be disabled.

For 3600 Trunking capable radios, this feature is disabled until Channel Bandwidth (KHz) is selected when multiple channels are selected.

When the Canada Full Frequency Range feature is enabled in the application, this feature accepts all the values in the NPSPAC channels (i.e. 806-809 MHz, 821-824 MHz, 851-854 MHz, 866-869 MHz) for all radio models. When the Canada Full Frequency Range feature is disabled in the application, this feature will not accept any values in NPSPAC channel except for the mutual aid channel frequencies.

This feature is disabled and its value is equal to the value of RX Frequency when the Dual Capacity Direct Mode (DCDM) feature is enabled.

This feature is disabled and set to the same value as the RX Frequency (Conventional Channel) if the Extended Range Direct Mode on page 768 is enabled.

This feature is applicable to MOTOTRBO Conventional radios, 3600 Trunking capable radios, andMOTOTRBO SLR Series repeaters in Conventional mode only.

3.55.3.25

TX Squelch Type

Sets the type of encoding the radio transmits on this channel.

The options are Carrier Squelch (CSQ), Tone Private Line (TPL) and Digital Private Line (DPL). This feature allows for more privacy on a frequency. This is a channel-wide feature.

NOTICE:
The RX Only feature must be disabled.

This feature is applicable to MOTOTRBO Conventional radios, 3600 Trunking capable radios, andMOTOTRBO SLR Series repeaters in Conventional mode only.

3.55.3.26

TX DPL Code (Octal)

This is the designated digital code transmitted on a Digital Private Line (DPL) coded transmission for this channel.

The DPL code is a three-digit octal number. This is a channel-wide feature.

Range:

Maximum	Minimum	Increment
777	000	1 (Octal)

NOTICE:
The Transmit Squelch Type feature must be set to DPL.

The RX Only feature must be disabled.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Analog mode only.

3.55.3.27

TX DPL Invert

Causes the radio to invert the Digital Private Line (DPL) code before transmitting.

Inverted codes allow for compatibility with the equipment that requires it. This is a channel-wide feature.

NOTICE:
The Transmit (TX) Squelch Type feature must be set to DPL.

The RX Only feature must be disabled.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Analog mode and 3600 Trunking capable radios in Conventional mode only.

3.55.3.28

TX TPL Frequency (Hz)

This is the designated frequency encoded into the transmitted signal for this channel.

The Tone Private Line (TPL) frequency is modulated into the carrier frequency. This is a channel-wide feature.

Range:

Maximum	Minimum	Increment
255.0 Hz	67.0 Hz	0.1 Hz

NOTICE:
The Transmit (TX) Squelch Type feature must be set to TPL.

The RX Only feature must be disabled.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Analog mode only.

3.55.3.29

TX TPL Code

This is a code representing a specific tone.

This tone is encoded into transmissions on this channel. The Tone Private Line (TPL) codes are predefined in Radio Management . When setting this field, the TPL Frequency automatically sets to the frequency corresponding to the selected code. This is a channel-wide feature.

NOTICE:
The Transmit (TX) Squelch Type feature must be set to TPL.

The RX Only feature must be disabled.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Analog mode only.

3.55.3.30
TX Signaling System

Associates any available MDC signaling system and Quick Call II signaling system to be used during transmission.

Any available MDC system and Quick Call II system may be associated with the channel. Selecting None limits the user to only be able to transmit a dispatch call upon a PTT (Push-to-Talk) button press. However, note that in this situation, an MDC or Quik-Call II call may be transmitted but only through the UCL (Unified Call List). This is a channel-wide feature.

NOTICE:
Configure the MDC Signaling System before selecting it or the default will be used.

The RX Only feature must be disabled.

When the radio is transmitting in Talkaround mode, the RX settings including RX Signaling System will be used for the transmission. However, it still requires the TX Signaling System to be set to a valid signaling system to enable the emergency settings of that assigned signaling system.

This feature is applicable to MOTOTRBO Conventional radios only.

3.55.3.31
TX TPL Setting

Allows the user to select a TPL setting from a list of standard TPL frequency choices.

This frequency is the designated frequency encoded into the transmitted signal for this channel. The TPL frequency is modulated into the carrier frequency. This is a channel-wide feature.

NOTICE:
The Transmit (TX) Squelch Type feature must be set to TPL.

Only the 83 EIA/TIA-603 standard codes are supported. Motorola codes and non-standard codes are not supported in these radios.

The RX Only feature must be disabled.

This feature is applicable to 3600 Trunking capable radios only.

3.55.3.32
TX Ref Frequency (MHz)

Selects the Reference Frequency used when transmitting on the current channel.

The reference frequency can be shifted to allow the radio to operate on channel frequencies that would otherwise be blocked by internally generated spurious signals. Internally generated spurious signals would appear as silent carriers on certain channel frequencies. Shifting the reference frequency allows these permanent signal carrier to be shifted to unused frequencies so that the desired channel frequencies can still be used. The options are Default, 5.6MHz or 8.4MHz for UHF band radios. As for VHF band radios, the options are Default, 3.36MHz or 4.2MHz. For other bands radios, the option is

set to Default and is not programmable. This is a channel-wide feature. The radio as it is shipped is compliant with all RTTE regulations. Changing the reference to these frequencies will impact the radio's performance specifications and could result in non-compliance with the RTTE requirements. Conformity to the local regulatory standards must be verified by the person/organization applying this change.

NOTICE:
The RX Only feature must be disabled.

This feature is disabled when Dual Capacity Direct Mode (DCDM) is enabled.

3.55.3.33
DPL Turn-Off Code

When a radio is programmed to transmit a Digital Private Line (DPL) code, it sends the digital code when the Push-to-talk(PTT) is keyed.

On PTT de-key, the tone signal is stopped, and a DPL Turn Off Code is sent to indicate the end of transmission to the receiving radio. This sub-audible code causes the receiving radio to mute its speaker before the loss of a carrier is detected to eliminate unwanted noise (squelch tail). This feature can be inhibited by assigning and asserting a GPIO pin (TOC/Reverse Burst Disable) to its active level. This is a channel-wide feature.

NOTICE:
The Transmit Squelch Type feature must be set to DPL.

The RX Only feature must be disabled.

For 3600 Trunking capable radios, only standard codes are supported.

This feature is applicable to 3600 Trunking capable radios and MOTOTRBO Conventional radios in Analog mode in Conventional mode only.

3.55.3.34
VOX (Conventional Channel)

This feature enables the VOX (Voice Operated Transmit) feature on a selected channel.

VOX provides a convenient means of hands-free voice activated communication, removing the need to press the Push-to-Talk (PTT) button. This feature enables the radio to automatically assume the Push-to-Talk (PTT) button is pressed whenever its microphone on the VOX-capable accessory detects voice. To avoid truncation at the beginning of the VOX call, Talk Permit tone (TPT) should be disabled. If TPT is enabled, the radio user shall use a trigger word to key-up the radio. This trigger word will not, in most cases, be transmitted. After uttering the trigger word, the radio user should begin speaking only after the TPT is heard. Channels may have their VOX feature toggled on/off via a short or long programmable button press (VOX On/Off) or VOX (Utilities Menu). This is a radio-wide feature.

NOTICE:
This feature is disabled if RX Only, Option Board Trunking or Allow Interruption is enabled.

It is recommended to disable the Talk Permit tone.

VOX operates with a “Channel Free” admit criteria regardless of the selected channel Admit Criteria.

3.55.3.35
TPL Reverse Burst

When the radio is programmed to transmit a Tone Private Line (TPL) code, it sends the tone code when Push-to-Talk (PTT) button is pressed.

On PTT dekey, the tone signal is stopped, and a Private Line (PL) 'reverse burst' is generated and sent to indicate the end of the transmission to the receiving radio. This sub-audible code causes the receiving radio to mute its speaker before the loss of a carrier is detected to eliminate unwanted noise (squelch tail). This feature can be inhibited by assigning and asserting a GPIO pin (TOC/Reverse Burst Disable) to its active level. This is a channel-wide feature.

None
No PL reverse burst sequence is transmitted at the end of a transmission.

Non-Standard
A non-standard reverse burst sequence is transmitted at the end of a transmission.

Standard
A standard reverse burst sequence is transmitted at the end of a transmission.

NOTICE:
A standard reverse burst consists of a PL code with a 240-degree phase shift, whereas a non-standard reverse burst consists of a PL code with a 180-degree phase shift. For compatibility with other manufacturers, the non-standard reverse burst is also supported.

The Transmit (TX) Squelch Type feature is set to TPL.

The RX Only feature must be disabled.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode and 3600 Trunking capable radios in Conventional mode only.

3.55.3.36
Power Level

Sets the radio's transmission power level for this channel.

This feature can be toggled between high or low, via a short or long programmable button press (High/Low Power) or Power (Utilities Menu) feature. In MOTOTRBO SLR Series repeater models, it can also select DC Cutback per channel (conventional)/personality (trunking). This is a channel-wide feature.

High
Used when a stronger signal is needed to extend transmission distances.

DC Cutback
This feature allows the station to transmit at a different output power when operating from a DC source. When running on DC, the high power or low power cannot be higher than the DC power. Only for MOTOTRBO SLR Series repeaters only.

Low
Used when communicating in close proximity, and to prevent transmissions into other geographical groups.

NOTICE:
For UHF Portable, Low Power is equivalent to 1W and High Power is equivalent to 4W. For Mobile and Repeater, the High and Low values are configurable through the TX High Power (W) and TX Low Power (W) features under General Settings.

The RX Only feature must be disabled.

This feature is applicable to MOTOTRBO SLR Series repeaters , MOTOTRBO Conventional radios and 3600 Trunking capable radios in Conventional mode only.

This feature is applicable in the repeater Dynamic Mixed Mode channel MOTOTRBO version 1.6a+ and MOTOTRBO SLR Series repeater releases.

3.55.3.37

TOT (sec)

The Time-Out Timer (TOT) is the duration that the radio can continuously transmit before a transmission is automatically terminated.

This feature is used to ensure the channel is not monopolized by any one radio. The user may set smaller time-outs for busier channels. This is a channel-wide feature.

Chassis may get warm to touch if Time-Out Timer for the current channel is set to infinity and continuous PTT for more than 15 minutes.

Range:

Maximum	Minimum	Increment
495 sec (for digital channels in Portables/Mobiles and analog channels in Portable CSA/ATEX model), infinity sec (for digital/analog channels in Repeaters and analog channels in Mobiles/Portables (excludes Portable CSA/ATEX model))	15 sec	15 sec

NOTICE:
Infinity is not a valid setting for Time-Out Timer (TOT) on digital TDMA channels in mobiles and portables because digital TDMA transmissions made by mobile and portables are susceptible to timing drift wherein the mobiles' and portables' transmissions may drift out of the intended timeslot and into the other timeslot when the radio has been keyed up continuously for an extended period of time. Timing drift affects radio transmission in digital channel and not in analog channels.

Time-out timer for this channel will be disabled if the infinity option is selected.

The RX Only feature must be disabled.

The range is 15 to 60 sec when the Dual Capacity Direct Mode (DCDM) feature is enabled.

This feature is applicable to 3600 Trunking capable radios in Conventional mode, MOTOTRBO Conventional radios, and MOTOTRBO SLR Series repeaters.

3.55.3.38

TOT Rekey Delay (sec)

Sets the amount of time that the radio waits on a channel after the Time-Out Timer (TOT) expires (which stops the radio transmission) before allowing the user to transmit again.

This is a channel-wide feature.

Range:

Maximum	Minimum	Increment
255 sec, ∞ sec	0 sec	1 sec

NOTICE:
This feature is available when the TOT is not set to Infinity (∞).

The RX Only feature must be disabled.

3.55.3.39

Admit Criteria

Determines when voice or data is allowed to be transmitted on the channel.

This is used to prevent a radio from transmitting on channels that are already being used. If the radio has different transmit and receive frequencies, only the receive frequency is monitored for activity. If no activity is found on the receive frequency, the radio allows the user to transmit on the transmit frequency even if it is being used. This is a channel-wide feature.

Always
The radio will always transmit when the Push-to-Talk (PTT) button is pressed. This option is also referred to as "Impolite" channel access (not available in a Capacity Plus–Single-Site Personality and Capacity Plus–Multi-Site Personality channel).

Channel Free
The radio will check for an idle channel prior to allowing a transmission. This option is also referred to as "Polite to All" channel access.

Correct PL
The radio will check for a PL match prior to allowing a transmission. This option is available only when Rx Squelch Type is set to TPL or DPL (for Analog channels only).

Color Code Free
The radio will check if the specified Color Code is not in use prior to allowing transmission (except for Group Calls that are already in progress). This option is also referred to as "Polite to Own Digital System" channel access (for Digital channels only).

Past TPL/DPL Lockout
Transmission is allowed when there is no carrier, or the correct PL has been detected since the latest carrier presence (for 5 Tone channels only).

TPL/DPL Lockout
Transmission is allowed when there is no carrier, or the correct PL has been detected (for 5 Tone channels only).

Carrier Gone Timer Expired
Transmission is allowed when there is no carrier and the Carrier Gone Timer has expired. (for 5 Tone channels only).

TPL/DPL Not Detected
Transmission is allowed if the correct PL is not detected. (for 5 Tone channels only).

No TPL/DPL or Past TPL/DPL
Transmission is allowed when there is no carrier, or the correct PL has not been detected since the latest carrier presence. (for 5 Tone channels only).

Channel Free or No TPL/DPL but Past TPL/DPL
Transmission is allowed when there is no carrier, or the correct PL has been detected since the latest carrier presence but not detected now (for 5 Tone channels only).

NOTICE:
Not all transmission types utilize these settings. For example, emergency voice always operates impolitely whereas data and control messages always operates politely. An exceptional case is the emergency alarm that is sent with a mix of impolite and polite channel access.

The RX Only feature must be disabled.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode and 3600 Trunking capable radios in Conventional mode only.

3.55.3.40

Admit Criteria Not Applied in Auto Reset Mode

When enabled, the radio is always allowed to transmit during the Auto Reset Mode, overriding the Admit Criteria feature.

This is a channel-wide feature.

NOTICE:
The RX Only feature must be disabled.

This feature is supported in Analog mode only.

3.55.3.41
Repeater Access and Radio ID Telegram

Specifies the Repeater Access and Radio ID telegram when the PTT Keyup Mode is set to Smart PTT.

The choices are all available telegrams. This is a channel-wide feature.

NOTICE:
The value of this feature is set to one of the available telegrams if the selected value is deleted or the pasted value does not exist in the available choices.

The RX Only feature must be disabled.

This feature is supported in Analog mode only.

3.55.3.42
ARTS Interval (sec)

Specifies the ARTS time interval for polling transmission in seconds (secs).

Range:

Maximum	Minimum	Increment
55 sec	22 sec	1 sec

NOTICE:
This feature is disabled if RX Only is enabled.

This feature is enabled if ARTS is set to TX or RX & TX.

This feature is supported in Analog mode only.

3.55.3.43
Location Data Delivery Mode

This feature provides a separate way to configure delivery mode of location data as confirmed or unconfirmed data; while other data will follow the definition in the Data Call Confirmed field.

Location Data refers to the Location Request and Response Protocol (LRRP) answer and report from the radio's internal application or from Option Board and Non-IP Peripheral devices (refer to Route Type [Digital Call] or Route Type [Capacity Plus–Single-Site]). A confirmed data has higher reliability than unconfirmed data. However, the layer 2 retry may cause the radio to be away from home channel for a longer time and miss the home channel activities. Location Data are usually triggered periodically. Therefore, the data is sent over-the-air more often than other type of data. This drop-down list allows the user to select whether or not to confirm location data transmissions. Available choices are Unconfirmed, Confirmed, Follow Data Call Confirmed.

Unconfirmed
If set to Unconfirmed, the data delivery mode for Location Data will be sent as unconfirmed data.

Confirmed
If set to Confirmed, the data delivery mode of Location Data will be sent as confirmed data.

Follow Data Call Confirmed
If set to Follow Data Call Confirmed, the confirmed or unconfirmed data delivery mode of Location Data will follow the definition in the Data Call Confirmed field.

3.55.3.44

Quick Key Override

Allows the user to override the conventional channel access rule (when configured for polite operation) so that they can transmit on a busy channel in an impolite fashion.

This is a channel-wide feature.

NOTICE:
The RX Only feature must be disabled.

This feature is applicable to 3600 Trunking capable radios in Conventional mode only.

3.55.3.45

Hot Keypad

Allows the user to dial DTMF digits by using the radio's keypad on an analog channel, even when the radio is not in Phone mode.

This is a channel-wide feature.

NOTICE:
The RX Only feature must be disabled.

This feature is applicable to 3600 Trunking capable radios only.

3.55.3.46

Contact Name (Conventional Channel)

Defines the call that may be initiated on the channel by pressing the Push-to-Talk (PTT) button.

However, if the channel is attached to a Group List with multiple Groups and there is an activity on one of the Groups, pressing PTT will initiate a talkback instead of a new call if it is within the hang time of the prior call. Selecting the None option prevents a call from being initiated on the channel. This is a channel-wide feature.

NOTICE:
Create the Call member under the Contacts folder before selecting it or the default will be used.

The RX Only feature must be disabled.

The PC Call and Dispatch Call options cannot be set for this feature.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.55.3.47

Emergency System

Associates any available digital emergency system to this channel for use during an emergency.

Selecting the None option disables the user from transmitting an emergency call from this channel. This is a channel-wide feature.

NOTICE:
The RX Only feature must be disabled.

This feature is set to None and grayed out when the Option Board Trunking feature is enabled (checked).

This feature is applicable for Digital, Capacity Plus–Single-Site System, and Capacity Plus–Multi-Site System Personalities only.

This feature is hidden on a Digital Channel when the Digital Emergency feature is disabled.

This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

3.55.3.48

Allow Interruption

This feature enables the radio to be interrupted during voice transmissions by radios that are Transmit Interrupt capable.

After the radio has been dekeyed, a voice, emergency, or data transmission can follow. In order to configure a radio to be Transmit Interrupt capable, see the TX Interrupt Remote Dekey programmable button option, the TX Interrupt option under In Call Criteria, and Emergency TX Interrupt.

NOTICE:
The RX Only feature must be disabled.

3.55.3.49

TX Interruptible Frequencies

This feature needs to be enabled if the frequency supports interruptible voice transmissions.

For frequencies supporting direct mode (talkaround) interruptible transmissions, there is no over the air definition of slotting. Therefore this is a frequency and not a channel (slot) consideration. Enabling this parameter adds a slight increase to channel access times in certain situations but reduces the probability of collisions on the frequency. Since GNSS and Data Revert Channels do not support voice calls, this feature should not be enabled on those channels. This is a channel-wide feature.

NOTICE:
The RX Only feature must be disabled.

This feature is supported in Digital mode only.

3.55.3.50

In Call Criteria

Determines when voice is allowed to be transmitted on the channel while in a call.

This criteria is used to allow or prevent a radio from transmitting on the channel while it is currently in a call and unmuted. This is a channel-wide feature.

Always
The radio will be allowed to transmit impolitely while in a call.

Follow Admit Criteria
The radio will follow the polite Admit Criteria rules while in a call.

TX Interrupt
The radio will follow the Transmitter Interrupt rules while in a call. Radios which are Transmitter Interrupt capable are able to dekey another radio, which is currently transmitting a voice call, in order to place their own calls.

NOTICE:
This feature must be disabled if RX Only feature is enabled.

This feature is supported in Digital mode only.

This feature is applicable for Digital, Capacity Plus–Single-Site System, and Capacity Plus–Multi-Site System Personalities only.

This feature supports the following choices in the Capacity Plus–Single-Site and Capacity Plus–Multi-Site personality: Follow Admit Criteria and TX Interrupt.

3.55.3.51

RSSI Threshold (dBm)

This field allows the user to set the RSSI (Received Signal Strength Indication) Threshold.

The radio is allowed to initiate a call if the Received Signal Strength is less than the configured RSSI threshold. This is a channel-wide feature.

Range:

Maximum	Minimum	Increment
-80 dBm	-124 dBm	1 dBm

NOTICE:
This feature is enabled when Admit Criteria is set to Channel Free or Correct PL.

It is recommended to increase the threshold in order to avoid channel busy as a result of RF interference.

The RX Only feature must be disabled.

3.55.3.52
Dual Slot Data Operation

This field allows the user to choose which Data Operation to use when using Dual Slot configuration. Choices are "None" and "GNSS".

NOTICE:

- This field is only applicable for Digital channels.
- This field is hidden when the Priority GNSS over Voice or Digital feature is disabled.
- This field is set to "None" and greyed out when **Enhanced GNSS** is unchecked.
- This field is set to "None" and greyed out when **RX Only** is checked.
- This field is set to "None" and greyed out when **Dual Capacity Direct Mode** is checked.

3.55.3.53
Data Call Confirmed

This feature enables individual packets in data calls (ARS, GNSS, and Text Message) on the current digital channel or personality to be confirmed (i.e. acknowledged) on the current digital channel to be confirmed on the Data Link level.

The transmitting radio resends data packets in the data call if the receiving radio does not respond with Data Link level acknowledgements or confirmations upon receiving the data packets. By default, data calls are unconfirmed. This is a channel-wide feature. For Location Data Delivery Mode, when the GNSS revert channel is IPSC channel, the Location Data will be sent as unconfirmed data mandatorily. At Capacity Plus–Multi-Site trunked or data revert channel, the Location Data will be sent as unconfirmed data mandatorily.

NOTICE:
This feature is disabled if RX Only and Enhanced GNSS are enabled.

3.55.3.54
Enhanced Channel Access

This check box allows the user to enable or disable the Enhanced Channel Access (ECA) feature for subscribers.

When enabled, the Enhanced Channel Access feature improves the reliability of transmissions by minimizing Over The Air (OTA) collisions when two or more radios initiate a call simultaneously. For

effective operation, this feature needs to be enabled on all the radios accessing the channel. This is a channel-wide feature.

NOTICE:
This feature is disabled if the Enhanced GNSS (Conventional Personality) on page 789 feature is enabled.

This feature is disabled if the Option Board Trunking feature is enabled.

This feature is not supported in the Dynamic Mixed Mode system configuration.

This feature is applicable in the Repeater mode of operation only. When this feature is enabled, all the radios under the same system must have different Radio ID.

This feature is disabled when the Dual Capacity Direct Mode (DCDM) feature is enabled.

This feature is grayed out if Admit Criteria on page 806 is set to **Always**.

This feature is applicable to digital channel (including Single Site, IP Site Connect, GNSS revert mode) and Capacity Plus–Single-Site data channel. Capacity Plus–Single-Site voice channel where this feature is inbuilt is not configurable by the user.

3.55.3.55
Enhanced Channel Access

This check box allows the user to enable or disable the Enhanced Channel Access (ECA) for Extended Range Direct Mode feature in repeaters.

When enabled, the ECA feature improves the reliability of transmissions by minimizing Over The Air (OTA) collisions when two or more radios initiate a call simultaneously. For effective operation, this feature must be enabled on the repeater and all the radios accessing the channel. ECA is a channel-wide feature.

NOTICE:
For Subscribers, the ECA setting is available in digital mode only.

For Repeaters, the ECA setting is only applicable when Extended Range Direct Mode on page 768 is enabled.

The ECA feature is not supported in a MOTOTRBO Link configuration.

3.55.3.56
TX DPL Code

This is the designated digital code transmitted on a Digital Private Line (DPL) coded transmission for this channel.

The DPL code is a three-digit octal number. This is a channel-wide feature.

NOTICE:
The Transmit Squelch Type feature must be set to DPL.

The RX Only feature must be disabled.

Only the 83 EIA/TIA-603 standard codes are supported. Motorola and non-standard codes are not supported in these radios.

This feature is applicable to 3600 Trunking capable radios in Conventional mode only.

3.55.3.57
CSBK Data

The field defines whether or not the CSBK data feature is enabled.

When this field is enabled, the ARS, Location report without location information will be sent as CSBK. When this field is enabled and the LRRP request meets the requirement of Location CSBK, the location report with location information will be sent as CSBK. When this field is enabled and the XCMP command meets the requirement of XCMP device to server CSBK, the raw data from the XCMP device to server will be sent as CSBK. This is a channel-wide feature.

NOTICE:
This feature is supported in Digital, Capacity Plus–Single-Site and Capacity Plus–Multi-Site mode.

This feature shall be disabled when the RX Only (Conventional Channel) is enabled.

3.55.3.58
TOT Type

Selects the type of timer per transmission on a 5 Tone channel. This is a channel-wide feature.

Non-cumulative
If the PTT is pressed continually for the time out timer (TOT) period, this option will then cause the radio to de-key after expiration of the timer and a button/keypad error alert will sound for the duration the PTT button remains pressed. The user is not able to re-key the radio until expiration of the transmitter TOT Rekey Delay.

Cumulative
A radio is not allowed to transmit after the cumulative total of transmissions has exceeded the time out timer (TOT) period unless reset by a receive period, with muted speaker, greater than the cumulative TOT reset duration. If the radio is PL squelched, the TOT will be reset if the radio is receiving carrier for longer than the cumulative reset duration time but does not detect its own PL in this period.

NOTICE:
This feature is enabled if the TOT feature is not set to Infinity(∞).

The RX Only feature must be disabled.

This feature is supported in Analog mode only.

3.55.3.59
Cumulative TOT Reset Duration (sec)

This field allows the user to configure the Cumulative TOT Rest duration.

Specifies the duration after which a radio is not allowed to transmit after reaching this cumulative total for transmissions, unless reset by a receive period with muted speaker is greater than this duration. This is a channel-wide feature.

Range:

Maximum	Minimum	Increment
255 sec	1 sec	1 sec

NOTICE:
This feature is enabled if the TOT Type feature is set to Cumulative.

The RX Only feature must be disabled.

This feature is supported in Analog mode only.

3.55.3.60

PTT Keyup Mode

Defines when, if at all, a telegram will be sent when the PTT is pressed. This is a channel-wide feature.

Disabled
No telegrams will be sent on PTT press.

Every PTT
A telegram will be sent out every time the radio is keyup with PTT pressed.

Once Only
A telegram will be sent when the radio starts a call.

Periodic
A telegram will be sent periodically when the radio is transmitting.

Smart PTT
Dedicated telegrams will be sent periodically when the radio is transmitting.

NOTICE:
The RX Only feature must be disabled.

This feature is supported in Analog mode only.

3.55.3.61

PTT Keyup Encode

Selects what is transmitted when the PTT is pressed. It can be any available telegram or Address Send.

If any available telegram is selected, PTT is a fixed telegram button. If Address Send is selected, different types of telegram will be sent depending on the radio operation. For example, if the radio is in the home screen, previously selected telegram will be sent. If the radio is In the Contacts list, the highlighted entry telegram will be sent. This is a channel-wide feature.

NOTICE:
This feature is disabled if the PTT Keyup Mode is set to Disabled or Smart PTT.

The value of this feature is set to one of the available telegrams if the selected value is deleted or the pasted value does not exist in the available choices.

The RX Only feature must be disabled.

This feature is supported in Analog mode only.

3.55.3.62

PTT Dekey Encode

Specifies a telegram to encode upon PTT release.

The options are None and all available telegrams. No telegram is sent upon PTT release if the None option is selected. This is a channel-wide feature.

NOTICE:
The value of this feature is reset to None if the selected value is deleted or the pasted value does not exist in the available choices.

The RX Only feature must be disabled.

This feature is supported in Analog mode only.

3.55.3.63

Radio ID Telegram

Specifies the Radio ID telegram when the PTT Keyup Mode is set to Smart PTT.

The choices are all available telegrams. This is a channel-wide feature.

NOTICE:
The value of this feature is set to one of the available telegrams if the selected value is deleted or the pasted value does not exist in the available choices.

The RX Only feature must be disabled.

This feature is supported in Analog mode only.

3.55.3.64

Encoder Hold Time (ms)

Specifies the duration in milliseconds (ms) for which the radio remains keyed up after a telegram is sent. This is a channel-wide feature.

Range:

Maximum	Minimum	Increment
2550 ms	0 ms	10 ms

NOTICE:
The RX Only feature must be disabled.

In Scan mode, this feature must be configured to more than twice of tone durations.

This feature is supported in Analog mode only.

3.55.3.65

Admit Criteria Not Applied in Auto Reset Mode

When enabled, the radio is always allowed to transmit during the Auto Reset Mode, overriding the Admit Criteria feature.

This is a channel-wide feature.

NOTICE:
The RX Only feature must be disabled.

This feature is supported in Analog mode only.

3.55.3.66

GNSS/Data Revert Zone

Allows the user to configure the Data revert channel when ARS is enabled.

3.55.3.67

GNSS/Data Revert Channel

This feature assigns an available single site digital channel as the Revert channel of Data for the current selected channel. A revert channel is the designated channel on which automatic Data updates are transmitted. The type of Data currently supported are GNSS, Indoor Location, and Sensor Data. This reduces traffic on a channel and allows the channel to accommodate more voice transmissions. The radio performs this action by automatically switching to the revert channel before transmitting an update, and switching back when the update is completed. By default, the revert channel is selected (Home) channel. An applicable digital channel can be used as Revert Channel for multiple channels.

GNSS/Indoor Location updates are then sent on the Revert channel if the target address is a server (Network ID = CAI Network + 1); otherwise the updates are sent on the selected channel. Sensor Data updates are sent on the Revert Channel if it is not configured as Enhanced Revert Channel. Voice traffic is discouraged on revert channels. This is a channel-wide feature.

None
No revert channel or ARS is disabled.

Selected
Data updates transmitted on the current channel.

All
Select from a list of all applicable transmit digital channels.

NOTICE:
This feature is disabled when ARS is disabled (unchecked).

This feature cannot be set to Selected and the channel cannot be a revert channel when Receive (RX) Only is enabled.

This feature is not available in Capacity Plus–Single-Site System channel.

This feature is set to None if the channel that is referenced as the GNSS Revert Channel has Dual Capacity Direct Mode (DCDM) enabled.

The value Selected is a choice if Dual Capacity Direct Mode (DCDM) is enabled for the current channel.

This feature is greyed out when the Dual Capacity Direct Mode (DCDM) is set to GNSS.

This feature is supported in Digital mode only.

3.55.3.68
Private Call Confirmed

Allows the user to configure Polite Individual call as confirmed or unconfirmed for the current digital channel.

3.55.3.69
Repeater Access ID

This field allows the user to configure the MDC Repeater Access ID.

NOTICE: This field is editable only when the **Signaling System** is set to a MDC Signaling System.

3.55.4
5 Tone Encode (Conventional Personality)

The **5 Tone Encode** section of the Conventional Personality set contains the following fields:

3.55.4.1
Call 1

Configures a Call button to be associated with a preprogrammed telegram. This is a channel-wide feature.

NOTICE:
The value of this feature is reset to None if the selected value is deleted or the pasted value does not exist in the available choices.

This feature is supported in Analog mode only.

3.55.4.2
Call 2

Configures a Call button to be associated with a preprogrammed telegram. This is a channel-wide feature.

NOTICE:
The value of this feature is reset to None if the selected value is deleted or the pasted value does not exist in the available choices.

This feature is supported in Analog mode only.

3.55.4.3
Call 3

Configures a Call button to be associated with a preprogrammed telegram. This is a channel-wide feature.

NOTICE:
The value of this feature is reset to None if the selected value is deleted or the pasted value does not exist in the available choices.

This feature is supported in Analog mode only.

3.55.4.4
Call 4

Configures a Call button to be associated with a preprogrammed telegram. This is a channel-wide feature.

NOTICE:
The value of this feature is reset to None if the selected value is deleted or the pasted value does not exist in the available choices.

This feature is supported in Analog mode only.

3.55.4.5
Call 5

Configures a Call button to be associated with a preprogrammed telegram. This is a channel-wide feature.

NOTICE:
The value of this feature is reset to None if the selected value is deleted or the pasted value does not exist in the available choices.

This feature is supported in Analog mode only.

3.55.4.6
Call 6

Configures a Call button to be associated with a preprogrammed telegram. This is a channel-wide feature.

NOTICE:
The value of this feature is reset to None if the selected value is deleted or the pasted value does not exist in the available choices.

This feature is supported in Analog mode only.

3.55.4.7
Disconnect Telegram

Specifies a telegram to be sent when the radio is going to exit the auto reset mode for any reasons, e,g mode change, Auto Reset Timer expired or clear down decoded.

The disconnect telegram is to indicate to the peer(s) of a call that a radio will no longer be in the session (i.e. no longer decoding any voice from the call). The choices are None and all available telegrams. No disconnect telegram is sent in the above scenario if None is selected. This is a channel-wide feature.

NOTICE:
The value of this feature is reset to None if the selected value is deleted or the pasted value does not exist in the available choices.

This feature is supported in Analog mode only.

3.55.4.8
Sidetone (5 Tone Channel)

When enabled, this feature enables the transmitted 5 Tone telegram to be heard as a sidetone in the transmitting radio speaker.

This can act as a comfort feature to the user in knowing that the radio has transmitted. This is a channel-wide feature.

NOTICE:
This feature is supported in Analog mode only.

3.55.5
5 Tone Decode (Conventional Personality)

The **5 Tone Decode** section of the Conventional Personality set contains the following fields:

3.55.5.1
Available and Decode Telegrams

The 5 Tone Decode section for a 5 Tone Personality set allows the user to select from a list of Available decoder definitions and add them to the list of Decode Telegrams.

NOTICE:
This feature does not support multiple selection.

Only the definition that has the same 5 Tone Signaling System can be added here.

This feature is supported in Analog mode only.

3.55.5.2
Adding Decode Telegrams

Adds the highlighted decoder definitions from the Available list into the Decode Telegrams list. This is a channel-wide feature.

NOTICE:
This feature is not supported in multiple selection.

This feature is disabled if the list is empty or no selection is highlighted in the Available list.

This feature is disabled if the Available list or the Decode Telegrams list are invisible.

This feature is supported in Analog mode only.

3.55.5.3

Removing Decode Telegrams

Removes the highlighted selection from the Decode Telegrams list to the Available list. This is a channel-wide feature.

NOTICE:
This feature is not supported in multiple selection.

This feature is disabled if the list is empty or no selection is highlighted in the Decode Telegrams list.

This feature is disabled if the Available list or the Decode Telegrams list are invisible.

This feature is supported in Analog mode only.

3.55.5.4

Authorization

Prevents the user from monitoring or transmitting until authorized. This is a channel-wide feature.

Disabled
The radio has normal transmit capabilities.

Enabled
The radio will only have transmit capabilities when it is called and until the Auto Reset Timer expires, or it decodes a clear down sequence.

Enabled with Request
Allows the user to request a call. Initially, the only call allowed by this option, is a call telegram, sent to the controller from a pre-programmed button. The telegram contains the address (ID) of the sender and the transmit request sequence. If this is acknowledged and approved by the controller, the radio will decode the authorization sequence that enables transmission and all normal transmit timers will apply. When the request is sent, the authorization timer is started. This can be set from 0 to 32 seconds. This is the time the radio remains unsquelched while the user awaits confirmation. At time out, or if clear down is decoded, the radio reverts to normal operation and the user knows the request was not granted.

NOTICE:
This feature is supported in Analog mode only.

3.55.5.5

Auto Reset Deauthorization

When enabled, the radio will revert to its programmed operation and authorization will be revoked when the Auto Reset Timer expires.

This is a channel-wide feature.

NOTICE:
This feature is disabled if the Authorization feature is set to Disabled.

This feature is supported in Analog mode only.

3.55.6

Capacity Max Systems (Conventional Personality)

The **Capacity Max Systems** section of the Conventional Personality set contains the following fields:

3.55.6.1

Capacity Max System

This drop-down list allows the user to select the Capacity Max System for the selected Channel Type.

The options are None and all available Capacity Max system lists.

NOTICE:

- This feature depends on the Channel Type. The default value is None.
- When the user sets Channel Type to Capacity Max Trunking, the Capacity Max System feature is configurable and the option None is disabled.
- When the user sets Channel Type to other options, the Capacity Max System feature is non-configurable.

.

3.55.6.2

Capacity Max Sites

This drop-down list allows the user to select the Capacity Max sites that belong to the Capacity Max System.

The options are None and all available Capacity Max site lists.

3.55.6.3

Capacity Max Channels

This drop-down list allows the user to select the Capacity Max channels that belong to the Capacity Max Site.

The options are None and all available Capacity Max channel lists.

NOTICE:

- This feature is enabled when the site type is Primary Receive Frequency (RF) Site.
- Only the Primary RF Site can contain channels.

3.55.7

Selecting the Right Antenna for the Channel Frequency

The correct stubby antenna must be selected and installed to meet the intended programmed frequencies.

NOTICE: This procedure is only applicable for SL Series radios.

When and where to use:
This procedure is applicable for SL Series radios and SL Series Commercial radios.

For **SL Series radios**, perform steps step 1 through step 3.

For **SL Series Commercial** radios, perform steps step 4 through step 6.

Procedure:

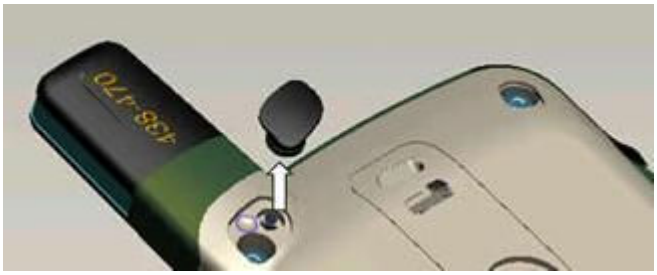
1 **For SL Series Radios:** Select the correct antenna from the following list:

Part Number	Antenna Type
PMAE4078A	Stubby Antenna Kit (403-425 MHz)
PMAE4076A	Stubby Antenna Kit (420-445 MHz)

Part Number	Antenna Type
PMAE4077A	Stubby Antenna Kit (438-470 MHz)

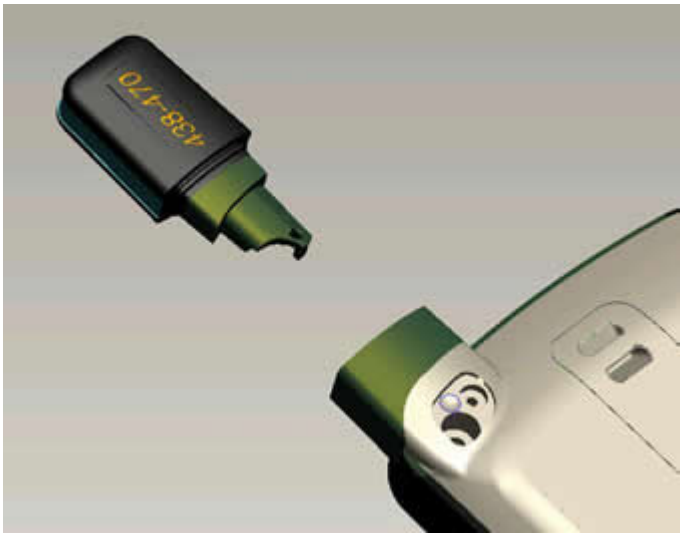
2 **For SL Series Radios:** Remove the existing antenna. Perform the following actions:

a Remove the antenna screw plug from the back housing.



b Remove the antenna screw.

c Pull the antenna from the radio.



3 **For SL Series Radios:** Install the new SL Series antenna in the reverse order.

4 **For SL Series Commercial Radios:** Select the correct antenna from the following list:

Part Number	Antenna Type
PMAE4093A	UHF1 Stubby Antenna Kit (403-425 MHz)
PMAE4094A	UHF1 Stubby Antenna Kit (420-445 MHz)

Part Number	Antenna Type
PMAE4095A	UHF1 Stubby Antenna Kit (438-470 MHz)
PMAD4144A	VHF Stubby Antenna Kit (136-144 MHz)
PMAD4145A	VHF Stubby Antenna Kit (144-156 MHz)
PMAD4146A	VHF Stubby Antenna Kit (156-174 MHz)

5 **For SL Series Commercial Radios:** Unscrew the antenna from the radio.

6 **For SL Series Commercial Radios:** Install the new antenna.

3.56
Zone Set

The **Zone** set is used for the assignment of a voice announcement file, personality sets, and additional zone related properties.

The following fields are supported:

3.56.1
Zone Name

This field allows the user to enter a unique alias for the zone.

3.56.2
Voice Announcement File Selection

This field allows the user to associate a voice announcement file to this zone.

Voice announcement is played when the user switches to this zone. Up to 20 zones are supported. This is a zone-wide feature.

3.57
Scan Set

The **Scan** set is used to set all time and threshold settings used by Scan list items.

The following section contains all the supported fields:

3.57.1
General (Scan)

The **General** section of the Scan set contains the following fields:

3.57.1.1
Digital Hang Time (ms)

Sets the time the radio will remain on a digital scan list member following the end of the channel activity.

The hang time prevents the radio from resuming scanning until the conclusion of the response to the initial call. The timer starts at the end of a transmission and resets whenever a valid activity is detected on the digital channel during the hang time.

Range:

Maximum	Minimum	Increment
10000 ms	500 ms	500 ms

NOTICE:
For firmware R01.07.00 and above, the scan hang time timer starts after the Repeater Digital Call Hang Time has expired in the Digital Repeater Mode.

For firmware R01.07.00 and above, the scan hang time timer starts after the Talkaround Call Hang Time has expired in the Digital Direct Mode.

For firmware R01.07.00 and above, this feature value should be set to the minimum (non-zero) value if no additional scan hang is needed after the call has ended.

For firmware earlier than R01.07.00, the scan timer runs concurrently with the Repeater Digital Call Hang Time and should be set to a higher value than the longest Hang Time of any repeater in the scan list.

This feature is supported in Digital mode only.

3.57.1.2

Analog Hang Time (ms)

Sets the time the radio will remain on an analog scan list member following the end of the channel activity.

The hang time prevents the radio from resuming scanning until the conclusion of the response to the initial call. The timer starts at the end of a transmission and resets whenever a valid activity is detected on the analog channel during the hang time.

Range:

Maximum	Minimum	Increment
10000 ms	0 ms	500 ms

NOTICE:
In Analog Repeater Mode, the scan hang time timer starts after the Repeater Analog Call Hang Time has expired.

In Analog Direct Mode, the scan hang time timer starts after the end of transmission since the Call Hang time is not applicable in this mode.

For analog features that use an Auto Reset Timer, the Auto Reset Timer serves as an additional Call Hang Time. Therefore, the Analog Hang Time will be started after the Auto Reset Timer expired plus any other Call Hang Time (depending on whether Repeater or Direct Mode is used).

This feature value should be set to the minimum (non-zero) value if no additional scan hang is needed after the call has ended.

3.57.1.3

Priority Alert

This is an alert tone that the radio emits when it unmutes to a priority channel during a scan operation.

NOTICE:
This feature is disabled if there is no Priority 1 member set to a scan list.

This feature is disabled if the Disable All Tones feature is enabled.

This feature is applicable to MOTOTRBO Conventional radios only and 3600 Trunking capable radios in Trunked mode only.

3.57.1.4
Off-Hook Suspends

Defines the radio's scan behavior when the microphone is off the hook.

Disabled
Scan is not affected.

Non-Priority
The radio only scans for priority channels.

All
All scanning is suspended. Off Hook does not suspend Talkgroup Scan in the Capacity Max channels.

3.57.1.5
Vote Scan Hang Time (sec)

Sets the duration that the radio remains on a Vote Scan list member following the end of the channel activity.

The hang time prevents the radio from resuming scanning until the conclusion of the response to the initial call. The timer starts at the end of a transmission and resets whenever a valid activity is detected on the channel during the hang time.

Range:

Maximum	Minimum	Increment
63.75 sec	0 sec	0.25 sec

NOTICE:
It is recommended to increase the hang time value if the call hang timer in the radio increases.

3.57.1.6
Fast Vote RSSI Threshold (dB)

Sets the value in which the RSSI value of carrier present on a channel is measured to determine whether to qualify for Fast Vote or Start Vote scanning operation for all the available vote scan lists.

If the measured RSSI exceeds the provisioned Fast Vote RSSI Threshold value, the radio remains on the channel and attempt to further qualify the signal. If the measured RSSI does not exceed, the radio checks for the next vote scan member. If all the RSSI values of Vote Scan members do not exceed this threshold value, the radio performs the Start Vote operation.

Range:

Maximum	Minimum	Increment
-70 dB	-120 dB	1 dB

NOTICE:
The value of this feature must be greater or equal to the value of Start Vote RSSI Threshold (dB).

3.57.1.7
Start Vote RSSI Threshold (dB)

Configures the start vote RSSI threshold for all the available Vote Scan lists.

Range:

Maximum	Minimum	Increment
-70 dB	-120 dB	1 dB

NOTICE:
The value of this feature must be less than Fast Vote RSSI Threshold (dB).

3.57.1.8
Scan Sweep Time (sec)

Defines the duration that a radio takes to scan a list of channels during idle period.

This timer starts when a call is over and resume scan when this timer expires.

Range:

Maximum	Minimum	Increment
255 sec	0 sec	1 sec

3.57.1.9
Talkgroup Scan Hang Time (ms)

Sets the duration of the radio remains in a Talkgroup Scan list member following the end of the channel activity.

The hang time prevents the radio from resuming scanning until the conclusion of the response to the initial call. The timer starts at the end of a transmission and resets whenever a valid activity is detected on the channel during the hang time.

The following table lists the supported range.

Table 56: Range

Maximum	Minimum	Increment
10000	500	500

3.58
Scan Items Set

The **Scan Items** set is a grouping of conventional channel or trunking personality monitored for transmission activity. When the list is attached to a channel or personality, the radio searches the list for an eligible channel or personality to receive, or unmute during a scan operation.

For 3600 Trunking capable radios, the Talk Group Scan List feature allows you to choose only from five unique Trunking Systems, with up to 50 Talkgroups in one unique system, and may include up to ten Conventional channels. The maximum number of members in the Talkgroup Scan list is 250 members, made up of conventional channels and trunking personalities (Talkgroup).

3.58.1
General (Scan Items)

This section explains the **General** settings of the Scan Items.

3.58.1.1
Scan List Name

This field allows the user to enter an alias that uniquely identifies the set within a list of Scan Items sets.

The range for the alias is up to 16 UCS-2 characters.

3.58.1.2
Available and Members

Allows the user to select from a list of **Available** conventional channels/trunking personalities and add them to the list of **Members**

These channels/personalities will be scanned for transmission activity during a scan operation.

3.58.1.3
Adding Scan Members

This paragraph is applicable to MOTOTRBO Conventional radios.

This feature adds channel(s) from the Available list into the Members list. Channel(s) in the Members list will be scanned for transmission activity during a scan operation. Channel(s) added to the Members list will be removed from the Available list. A maximum of 16 channels (including the Selected channel) may be added to a Members list. The Scan List can contain both the Analog or Digital channels. During a scan operation, if the radio detects any activity on the scanned channel, the scanned channel configuration will be used.

This paragraph is applicable to 3600 Trunking capable radios for a Conventional Scan List (Conventional mode) This feature adds conventional channel(s) from the Available list into the Members list. Channel(s) in the Members list will be scanned for transmission activity during a scan operation. Channel(s) added to the Members list will be removed from the Available list. A maximum of 16 channels (including the Selected channel) may be added to a Members list. During a scan operation, if the radio detects any activity on the scanned channel, the scanned channel configuration will be used.

This paragraph is applicable to 3600 Trunking capable radios for a Priority Monitor Scan List (Trunked mode). This feature adds trunking personality or personalities from the Available list into the Members list. Personalities in the Members list will be scanned for transmission activity during a scan operation. Personalities added to the Members list will be removed from the Available list. A maximum of 16 personalities (including the Selected personalities) may be added to a Members list. During a scan operation, if the radio detects any activity on the scanned personality, the scanned personality configuration will be used.

This paragraph is applicable to 3600 Trunking capable radios for a Talk Group Scan List (Trunked mode), this feature adds conventional channel(s) or trunking personalities from the Available list into the Members list. Channel(s) or trunking personalities added to the Members list will be removed from the Available list. During a scan operation, the radio scans every member in the Members list for transmission activity and switches to the channel or personality accordingly. A maximum of 10 conventional channels or 50 trunking personalities (including the Selected channel) may be added to a Members list. During a scan operation, if the radio detects any activity on the scanned channel, the scanned channel configuration will be used.

To add a scan member:

1 Select a channel/personality to be added from the Available list.

2 Click the Add button.

NOTICE:
This feature is disabled if no channel/personality is selected in the Available list or if the list is empty.

This feature is disabled when multiple scan lists are selected

For MOTOTRBO Conventional radios, Single site or Multisite channels/personalities can be members of the scan lists.

For 3600 Trunking capable radios Talk Group Scan List feature, channels/personalities can be members of the scan lists.

It is not recommended to assign select 5 decode to a priority channel. Any 5 tone decodes on the priority channel will most likely be missed because of the period between priority channel checks.

For Vote Scan list, if a channel to be added to a Vote Scan Members list is an Analog channel with Quik-Call II signaling system and Signaling Squelch set to And, or is a 5 Tone channel with Squelch Mode set to Tone, this channel cannot be added to the Vote Scan Members list as it may not work properly.

Channel(s) with Option Board Trunking enabled is removed from the scan list.

3.58.1.4
Removing Scan Members

Removes the selected conventional channel(s)/trunking personalities from the Members list.

The channel/personality will return to the Available list. The Selected channel is the channel indicated by the radio's channel selector and cannot be removed.

1 Select a channel/personality to be removed from the Members list.

2 Click the Remove button.

NOTICE:
This feature is disabled if no channel/personality is selected in the Members list.

3.58.1.5
Set/Clear Priority 1

Toggles the Priority 1 scanning status of the highlighted conventional channel/trunking personality in the Members list.

When the Priority 1 status is set to the highlighted channel/personality, the Priority 1 status on another channel/personality (if any) is cleared. During scan, 50% of a radio's scans are on the Priority 1 member. If a Priority 2 member exists, scans for the Priority 1 member are reduced from 50% to 25%. Even after landing on a non-priority or Priority 2 member, the radio continues to periodically scan for transmission activity on a Priority 1 member. If the radio discovers activity on the Priority 1 member, it drops the current transmission, and unmutes to the Priority 1 member.

To set the priority:

1 Select a channel/personality from the Members list.

2 Click on the Set/Clear Priority 1 button.

NOTICE:
This feature is disabled if no channel/personality is selected in the Members list.

It is not recommended to assign any 5 Tone decodes to a priority channel as the decodes will most likely be missed because of the period between priority channel checks.

This feature is applicable to MOTOTRBO Conventional radios only and 3600 Trunking capable radios in Trunked mode only.

3.58.1.6
Set/Clear Priority 2

Toggles the Priority 2 scanning status of the highlighted conventional channel/trunking personality in the Members list.

When the Priority 2 status is set to the highlighted channel/personality, the Priority 2 status on another channel/personality (if any) is cleared. During scan, 25% of a radio's scans are on the Priority 2 member. If a Priority 2 member exists, scans for the Priority 1 member are reduced from 50% to 25%. Even after landing on a non-priority channel, the radio continues to periodically scan for transmission activity on a Priority 2 member. If the radio discovers activity on the Priority 2 member, it drops the current transmission, and unmutes to the Priority 2 member. Activity on a Priority 2 member will be dropped in the event of any valid activity on a Priority 1 member.

To set the priority:

1 Select a channel/personality from the Members list.

2 Click on the Set/Clear Priority 2 button.

NOTICE:
This feature is disabled if no channel/personality is selected in the Members list.

This feature is enabled when there is a Priority 1 member in the Members list.

It is not recommended to assign any 5 Tone decodes to a priority channel as the decodes will most likely be missed because of the period between priority channel checks.

This feature is applicable to MOTOTRBO Conventional radios only and 3600 Trunking capable radios in Trunked mode only.

3.58.1.7
Rx Unconf Grp Data All Scan Members

When enabled, this field allows the radio to receive unconfirmed group data on other non-home channels in the Scan list.

Any reply or transmission of text messages or data occurs on the home channel.

NOTICE:
If the current home channel is an analog channel, non-home digital channels cannot receive group data even though this field is enabled.

Motorola Solutions recommends getting expert advise before configuring this field. The modification of this field impacts the performance of ongoing calls.

3.58.1.8
Talkback

Determines if the user is able to transmit on the channel it unmutes during scan.

If this feature is disabled, the radio transmits on the channel indicated by the TX Designated Channel feature.

3.58.1.9

PL Type

This feature indicates if Private Line (PL) decoding is required to unmute to a channel with activity during a scan operation.

Disabling the need for PL decoding increases the scanning speed.

Disabled
PL decoding not required.

Non-Priority Channel
PL decoding required on non-priority scan list member channels.

Priority Channel
PL decoding required only on a Priority 1 or a Priority 2 scan list member channel.

Priority and Non-Priority Channel
PL decoding required on all current scan list member channels.

NOTICE:
Ensure that there are priority members on the scan list before selecting the Priority Channel option.

Enabling this feature overrides the PL associated with the scan list member channel.

This feature is applicable to MOTOTRBO Conventional radios only.

3.58.1.10

Channel Marker

During priority monitoring, the radio will sample higher priority members while unmuted to lower priority members.

As the radio is transmitting voice to the user, leaving the current member to scan for higher priority members will cause audio holes in the transmission played out of the radio's speaker. The Channel Marker feature can be used to reduce the audio holes experienced during priority monitoring. This feature assumes that if a transmission was recently identified as 'not of interest' (in Analog Mode, it is identified by matching the PL code, whereas in Digital mode, it is identified by matching the ID), there is no need to fully qualify it at every priority sampling interval. The radio only needs to identify the type of transmission (e.g. DPL, TPL, etc) taking place. If the type of transmission is the same as the transmission identified as 'not of interest', the radio will ignore the activity. This assumption is made for a predetermined number of times, after which, the scan member is fully qualified again. However, this assumption may not be correct every time.

The tradeoff is between the audio quality of non-priority scan members versus the reliability of detecting the activity of interest of priority members. If audio quality is very important, it is recommended to enable channel marking, but note that priority scanning reliability is decreased. This feature is also known as PL Lockout.

NOTICE: For Vote Scan, if this feature is enabled, the channel(s) will be marked if there is no match PL when qualifying Vote Scan member.

3.58.1.11

TX Designated Channel Zone

This field allows you to select transmit designated personality for Trunking zone.

3.58.1.12

TX Designated Channel

This feature defines the conventional channel/trunking personality on which the radio will transmit if the user presses the Push-to-Talk (PTT) button while the radio is scanning.

This paragraph is applicable to MOTOTRBO Conventional radios. If the Talkback option is disabled, this feature also defines the channel/personality where the radio will transmit if the user presses the PTT when the radio has stopped scanning to unmute to an eligible scan list member. Any channel can be selected as the TX Designated Channel. Alternatively, Selected or Last Active Channel may be chosen.

This paragraph is applicable to 3600 Trunking capable radios. This feature is disabled if the Talkback feature is enabled. When enabled, any scan member or Selected may be chosen as the TX Designated Channel in Conventional scanning (Conventional mode). This feature is fixed at Selected and not configurable in Priority Monitor scanning (Trunked mode).

For MOTOTRBO Conventional Radios:

Option	Functionality
Selected	The channel indicated by the channel selector.
Last Free Channel	The channel where the radio detects no signal on it.
Last Active Channel	The last channel where the radio in scan mode stopped and unmuted to receive audio.
Voted	The last voted channel where the radio in scan mode stopped and unmuted to receive audio.

For 3600 Trunking Capable Radios:

Option	Functionality
Selected	The scan member indicated by the channel selector.

NOTICE:
For MOTOTRBO Conventional radios, during a scan operation, if this feature is set to Last Active Channel, when the radio stops and unmutes to an eligible channel and the user presses the PTT, the radio talks back to the Group that initiated the transmission on the channel during the scan hang time. After the scan hang time expires and the user presses the PTT, the user is now transmitting to the TX Contact Name specified for the last active channel. This is because the radio only remembers the last active channel, not the Group that it talked back. Therefore, during a scan operation, if the user wishes to always talk back to the same Group when this feature is set to Last Active Channel, it is suggested that the channel be attached to a RX Group List that has only one Group and that Group be set to the TX Contact Name of the channel. This essentially makes the last active channel the same as the last active Group.

For MOTOTRBO Conventional radios, the TX Designated Channel can be an Analog or a Digital channel.

For MOTOTRBO Conventional radios, when there are non-analog channels in the Scan List and the Tx Designated Channel is set to Last Free Channel, the radio will transmit on the current selected channel rather than the last free channel.

The TX Designated Channel must not be set to RX Only.

This feature is applicable to MOTOTRBO Conventional radios and 3600 Trunking capable radios in Conventional mode only.

3.58.1.13

3600 Trunking TX Designated Channel

This field allows the user to select transmit designated personality for Trunking.

3.58.1.14

Signaling Hold Time (ms)

Sets the amount of time that the radio waits on an analog scan list channel when a carrier signal of sufficient amplitude is detected on the channel.

This pause allows the radio time to decode the analog system signaling data. If the decoded information is incorrect, the radio reverts to scan.

Range:

Maximum	Minimum	Increment
6375 ms	50 ms	25 ms

NOTICE:
This feature must be equal to or greater than the amount of time it takes the radio to transmit the signaling data packet plus the channel's Signaling Systems Pretime.

For 5 Tone channel scanning, the recommended value of this feature is calculated as such: Pretime + N x tone duration, where N is five or greater. A greater value of N improves the landing rate.

This feature is applicable to MOTOTRBO Conventional radios in Analog mode only.

3.58.1.15

Priority Sample Time (ms)

Sets the duration that the radio waits, when in a call, before scanning the priority channels.

If the call is taking place on a Priority 1 Channel, no scanning will take place. When scanning priority channels, the radio briefly mutes the current transmission. Increasing this interval improves the audio quality of the current transmission as fewer checks are done, but this also increases the chance of the radio missing out priority channel activity.

Range:

Maximum	Minimum	Increment
7750 ms	750 ms	250 ms

NOTICE:
A priority member must be present in the scan list.

3.58.1.16

Auto Acknowledgement

Allows the user to enable or disable "Auto Acknowledgement" in a conventional scan list and a Vote Scan list.

3.58.1.17

Voice Scan Hang Time

When enabled, the radio uses the programmed scan hang time for voice, data, and control signaling block (CSBK).

The radio remains active following the end of channel activity for the duration of the scan hang time. When disabled, Voice Scan Hang Time is disabled on the radio with no scan hang time for voice, data, and CSBK. The radio resumes scanning immediately after the end of channel activity.

NOTICE:
For the full Scan Hang Time feature, see Scan Set on page 822.

Motorola Solutions recommends getting expert advise before configuring this field. The modification of this field impacts the performance of ongoing calls.

3.58.1.18
Pre-time Delay (ms)

Sets the duration that the radio waits when it detects carrier on Vote Scan list member before continuing the scan sequence.

Range:

Maximum	Minimum	Increment
1500 ms	0 ms	25 ms

3.58.1.19
Early Unmute

If enabled, the radio unmutes in Vote Scan mode before confirming the correct PL. If the PL has been qualified, the radio remains unmuted, or else the radio will mute and continue the scan sequence.

NOTICE:
This is performed only when the radio is attempting on Fast Vote mode.

3.58.1.20
Display Voted Channel on RX

If enabled, when the radio has stopped scanning to unmute to an eligible Vote Scan list member, the Vote Scan channel is displayed on the radio. If disabled, the selected channel is displayed instead in that event.

3.58.1.21
Display on TX Channel

If enabled, during scanning or in Vote Scan hang time (if talkback is disabled), the TX Designated Channel is displayed on the radio when the user presses PTT to transmit; or the Vote Scan channel that the radio unmutes to is displayed on the radio (if talkback is enabled) when the user presses the PTT. If disabled, the selected channel is displayed instead in those events.

3.59
Roam Set

The **Roam** set is used to enable or disable the Active Site Search feature.

Active Site Search allows the radio to automatically look for the nearest available site by waking up each repeater in the roam list until an available site is found.

3.59.1
Active Site Search

This feature enables Active Site Search triggered by a transmission request.

When this feature is used, the radio automatically looks for the nearest available site by waking up each repeater in the roam list until an available site is found. The next available site is not necessarily the site with the strongest RSSI value among the members of the Roam List. This is a channel-wide feature.

NOTICE:
This feature is supported in Digital mode only.

3.60
Roam List Set

The **Roam List** set is used to define a grouping of channels to be monitored to locate the site with the strongest signal strength. When this list is attached to a channel, the radio searches the list during the roam operation to locate the site with the strongest RSSI value.

The following section contains all the supported fields:

3.60.1
General (Roam List)

The **General** section of the Roam List set contains the following fields:

3.60.1.1
RoamList Name

This field allows the user to name the Roam List.

3.60.1.2
Available and Members (Roam List)

Allows the user to select from a list of **Available** Roam Lists and add them to the list of **Members**, including priority settings.

See Adding Roam Members on page 833 and Removing Roam Members on page 834.

NOTICE:

- This feature is supported in Digital mode only.
- This feature is disabled when multiple lists are selected.
- This feature is hidden when the IP Site Connect feature is disabled.

3.60.1.3
Adding Roam Members

Adds channel(s) from the Available list into the Members list. Channel(s) in the Members list will be roamed during the roam operation to locate the site with the strongest RSSI value.

Site Lock should be toggled Off to enable this feature to run continuously in the background. Channel(s) added to the Members list will be removed from the Available list. A maximum of 16 channels (including the Selected channel) may be added to a Members list. The Roam List can contain only Digital channels with IP Site Connect enabled. This is a radio-wide feature.

To add a roam member:

1 Select a channel to be added from the Available list.

2 Click the Add button.

NOTICE:
This feature is disabled if no channel is selected in the Available list or if the list is empty.

This feature is supported in Digital mode only.

3.60.1.4
Removing Roam Members

Removes the selected channel(s) from the Members list.

The channel will return to the Available list. The Selected channel is the channel indicated by the radio's channel selector and cannot be removed.

To remove a roam member:

1 Select a channel to be removed from the Members list.

2 Click the Remove button.

NOTICE:
This feature is disabled if no channel is selected in the Members list.

This feature is supported in Digital mode only.

3.60.1.5
Use Per-Site RSSI Threshold

This field allows the user to enable or disable use of the Per-Site RSSI Threshold.

NOTICE: This field is hidden when the IP Site Connect feature is disabled.

3.60.1.6
RSSI Threshold (dBm) (Roam List)

This field allows the user to set the RSSI (Received Signal Strength Indication) Threshold.

If the current site has an RSSI value that exceeds this threshold, the site is assumed to have good coverage and the radio suspends roaming. This is a channel-wide feature.

Range:

Maximum	Minimum	Increment
-60 dBm	-120 dBm	-1 dBm

NOTICE:
This feature is supported in Digital mode only.

This feature is greyed out when Use Per-Site RSSI Threshold (Roam List) is checked.

3.61
Capacity Plus Voice List Set

The **Capacity Plus Voice List** set allows the user to add a Capacity Plus–Single-Site Voice Channel. The set associates a Capacity Plus Voice List to a channel. While in Capacity Plus–Single-Site mode, rest channels, channels for voice calls, and channels for transmitting radio-to-radio Text Messaging Service (TMS) data calls are selected from the Members of this list. Any available Capacity Plus Voice List can be selected. Capacity Plus Voice List is a channel-wide feature.

The following section contains all the supported fields:

3.61.1
General (Capacity Plus Voice List)

This section explains the **General** settings of the Capacity Plus Voice List.

3.61.1.1
Voice Name

This field allows the user to enter an alias that uniquely identifies the set within a list of Capacity Plus Voice List sets.

The range for the alias is up to 16 UCS-2 characters.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.61.1.2
Available and Members

Allows the user to select from a list of **Available** Capacity Plus voice channels and add them to the list of **Members**.

NOTICE: This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.61.1.3
Adding Capacity Plus Voice Channel Members

Adds a channel from the Available list into the Members list. Channel(s) added to the Members list will be removed from the Available list.

As channels are added, frequency pair slots are sequentially assigned to each channel (i.e. if Ch1, Ch3, Ch2 are added in that order, the channel IDs would be 1-2, 3-4, 5-6 in that order.). While in Capacity Plus–Single-Site mode, rest channels, channels for voice calls, and channels for transmitting radio-to-radio Text Messaging Service (TMS) data calls are selected from channels on the Members list.

To add a Capacity Plus Voice Channel Member:

1 Select a channel to be added from the Available list.

2 Click the Add button.

NOTICE:
This feature is disabled if no channel is selected in the Available list or if the list is empty.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.61.1.4
Removing Capacity Plus Voice Channel Members

Removes channel(s) from the Members list to the Available list.

To remove a Capacity Plus Voice Channel Member:

1 Select a channel to be removed from the Members list.

2 Click the Remove button.

NOTICE:
This feature is disabled if no channel is selected in the Members list or if the list is empty.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.62
Capacity Plus Data List Set

The **Capacity Plus Data List** set allows the user to add a Capacity Plus Data Channel. This set associates a Capacity Plus Data List to a channel. While in Capacity Plus–Single-Site mode, channels for data calls (except radio-to-radio Text Messaging Service data calls) are selected from the Members of this list. Any available Capacity Plus Data List is selected. Capacity Plus Data List is a channel-wide feature.

The following section contains all the supported fields:

3.62.1
General (Capacity Plus Data List)

This section explains the **General** settings of the Capacity Plus Data List.

3.62.1.1
Data Name

This field allows the user to enter an alias that uniquely identifies the set within a list of Capacity Plus Data List sets.

The range for the alias is up to 16 UCS-2 characters.

NOTICE: This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.62.1.2
Available and Members

Allows the user to select from a list of **Available** Capacity Plus data channels and add them to the list of **Members**.

See Adding Capacity Plus Data Channel Members on page 836 and Removing Capacity Plus Voice Channel Members on page 837.

NOTICE: This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.62.1.3
Adding Capacity Plus Data Channel Members

Adds channel(s) from the Available list into the Members list.

Channel(s) added to the Members list will be removed from the Available list. While in Capacity Plus–Single-Site mode, channels for data calls (except radio-to-radio Text Messaging Service (TMS) data calls) are selected from channels on the Members list.

To add a Capacity Plus Data Channel Member:

1 Select a channel to be added from the Available list.

2 Click the Add button.

NOTICE:
This feature is disabled if no channel is selected in the Available list or if the list is empty.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.62.1.4
Removing Capacity Plus Voice Channel Members

Removes channel(s) from the Members list to the Available list.

1 Select a channel to be removed from the Members list.

2 Click the Remove button.

NOTICE:
This feature is disabled if no channel is selected in the Members list or if the list is empty.

This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.62.1.5
Enhanced GNSS Window Size

This feature allows the user to configure the Window Size for an Enhanced GNSS channel.

NOTICE:
This feature is hidden when the Digital or Capacity Plus–Single-Site/Capacity Plus–Multi-Site or Enhanced GNSS is disabled.

For MOTOTRBO subscribers, the choices are 5, 6, 7, 8, 9, and 10.

3.62.1.6
Enhanced Channel Access

This field allows the user to enable or disable the Enhanced Channel Access for Capacity Plus.

When enabled, the Enhanced Channel Access feature improves the reliability of transmissions by minimizing Over The Air (OTA) collisions when two or more radios initiate a call simultaneously. For effective operation, this feature needs to be enabled on all the radios accessing the channel. This is a channel-wide feature.

NOTICE:
If this feature is enabled on a Capacity Plus Data List, members of the list cannot have Enhanced GNSS activated. This configuration is invalid.

This feature is supported in Digital mode only.

3.63
Capacity Plus Site List Set

The **Capacity Plus Site List** set is a grouping of sites within the Capacity Plus–Multi-Site system.

The Capacity Plus–Multi-Site system is a Trunked multi-site multi-channel configuration of MOTOTRBO, which combines the trunking feature of the Capacity Plus–Single-Site and the multi-site feature of the IP Site Connect configurations.

The following section contains all supported fields:

3.63.1
General (Capacity Plus Site List)

This section explains the **General** settings of the Capacity Plus Site List.

3.63.1.1
Site Name

This field allows the user to enter an alias that uniquely identifies the set within a list of Capacity Plus Site List sets.

The range for the alias is up to 16 UCS-2 characters.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios and MOTOTRBO SLR Series repeaters in Digital mode only.

3.63.1.2
GNSS/Data on Revert Channel

This check box allows the user to enable and disable background data to be sent on trunk channel in the absence of Data Revert. The Background Data is GNSS, Indoor Location, and Sensor Data.

3.63.1.3
Use Per-Site RSSI Threshold

This field allows the user to enable or disable use of the Per-Site RSSI Threshold.

NOTICE: This feature is hidden when the IP Site Connect feature is disabled.

3.63.1.4
RSSI Threshold (dBm)

Sets the Received Signal Strength Indication (RSSI) Threshold that triggers the radio to perform a search for the nearest strongest signal.

Range:

Maximum	Minimum	Increment
-60 dBm	-120 dBm	1 dBm

NOTICE:
This feature is supported in Digital mode only.

This feature is greyed out when Use Per-Site RSSI Threshold (Capacity Plus–Multi-Site) is checked.

This feature is hidden when the user disables Capacity Plus–Multi-Site.

3.63.1.5

Site ID (Subscriber)

Enters the ID of the site that the subscriber radio will connect to.

NOTICE:
This ID must match the Site ID of the Repeater.

Duplicate IDs are not allowed.

This feature is supported in Digital mode only.

3.63.1.6

Site Alias

Configures a name for the site that the subscriber radio will connect to.

NOTICE:
Duplicate name is not allowed.

This feature must not be empty.

This feature is supported in Digital mode only.

3.63.1.7

Voice Announcement File

Associates a voice announcement file to this feature. The choices are None and all available voice announcement files.

NOTICE:
This feature is disabled if None is the only choice.

This feature is supported in Digital mode only.

3.63.1.8

Voice List

Associates a Capacity Plus Voice Channel List that the subscriber radio will use to make voice calls when on the site.

Any available Capacity Plus Voice Channel List can be selected. If the None option is selected, no Capacity Plus Voice Channel List is specified to be use when on the site.

NOTICE: This feature is supported in Digital mode only.

3.63.1.9

Data List

Associates a Capacity Plus Data Channel List that the subscriber radio will use to make data calls when on the site.

Any available Capacity Plus Data Channel List can be selected. If the None option is selected, no Capacity Plus Data Channel List is specified to be used when on the site.

NOTICE: This feature is supported in Digital mode only.

3.63.1.10
RX Group List

Associates a RX Group List that the subscriber radio will use to make Group Calls when on the site.

Any available Capacity Plus Group List can be selected. If the None option is selected, no RX Group List is specified to be use when on the site.

NOTICE: This feature is supported in Digital mode only.

3.63.1.11
RSSI Threshold (dBm)

This feature sets the Received Signal Strength Indication (RSSI) Threshold that triggers the radio to perform a search for the nearest strongest signal.

Table 57: RSSI Threshold Range

Maximum	Minimum	Increment
-60 dBm	-120 dBm	1 dBm

NOTICE: This feature is supported in Digital mode only.

3.64
Korea Location Protocol Set

Korea Location Protocol is a set of protocol that allows the user to set the location information that the user wants the radio to convey. The **Location Information Protocol** set contains information regarding the configuration related to Location Information Protocol.

The following section contains all supported fields:

3.64.1
Location Report Selection

This field is used to specify message format for Location Information Protocol. There are two basic location reports, mainly short location report (default option) and long location report.

3.64.2
Korea Location Periodic Trigger Interval

Allows the user to configure the periodic trigger interval of the Korea Location Protocol.

Table 58: Reporting Interval Range

Disabled	Minimum Reporting Interval	Maximum Reporting Interval	Increment
0 sec	5 sec	300 sec	5 sec

NOTICE: When maximum reporting interval expires, the client initiates location report transmission transaction.

3.64.3
Korea Location Distance Trigger Distance (Meter)

Allows the user to configure the distance trigger of the Korea Location Protocol.

After configured, the radio can initiate the location report transmission transaction when the threshold for both the Korea Location Distance Trigger Distance (Meter) on page 841 and the Korea Location Distance Trigger (Interval) on page 841 have exceeded.

Table 59: Reporting Distance Range

Disabled	Minimum Reporting Distance	Maximum Reporting Distance	Increment
Between 100 meter to 10 kilometer			
0	100 meter	10 kilometer	100 meter
Between 10.5 kilometer to 24 kilometer			
0	10.5 kilometer	24 kilometer	500 meter

NOTICE: Reporting distance is calculated as the distance between the current location and the last reported location.

3.64.4
Korea Location Distance Trigger (Interval)

Allows the user to configure the interval of the Korea Location Protocol distance trigger.

After configured, the radio can initiate the location report transmission transaction when the threshold for both the Korea Location Distance Trigger Distance (Meter) on page 841 and theKorea Location Distance Trigger (Interval) on page 841 have exceeded.

Table 60: Interval Distance Trigger Range

Default	Minimum Reporting Interval	Maximum Reporting Interval	Increment
1 second	5 seconds	120 seconds	5 seconds

3.64.5
Korea Location Emergency Trigger

Allows the user to enable or disable emergency call as a trigger for sending the location information. Default Korea Location Emergency Trigger Selection is disable.

When enabled, the radio can support the the following emergency updates for Korea Location Protocol:

- Emergency Alarm
- Emergency Alarm and Call
- Emergency with Voice to follow

NOTICE: If Korea Location Protocol report transmission is pre-empted by emergency voice transmission, the Korea Location Protocol client can retry the the Korea Location Protocol report transmission after the emergency voice call is completed.

3.65
MNIS Security Set

The **MNIS Security** set is used to configure the Basic Privacy Key, Enhanced Privacy Keys, and Symmetric Keys for the IP data gateway using the Motorola Network Interface Service (MNIS).

The following sections contain all the supported fields:

3.65.1
General (MNIS Security)

The **General** section of the MNIS Security set contains the following fields:

3.65.1.1
Key ID

This feature allows a Key ID to be assigned to each Key Value when Privacy Type is set to Enhanced.

The Key ID is an index key that is mapped to the encryption key used for scrambling. Every Key Value can only have one Key ID. Each Key ID must be unique and cannot be a duplicate of another. The Key ID is preserved during cloning a device when Clone Radio Identity is disabled. If the Key ID is out of range, the first available ID will be used. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
255	1	1

3.65.1.2
Key Alias

This feature provides a 16-character Key Alias to be assigned to a Key ID when Privacy Type is set to Enhanced.

Every Key ID can only have one Key Alias. Each Key Alias must be unique and cannot be a duplicate of another. If duplicate Alias is entered, the value shall be updated to be the previous value and display a message. The Key Alias is preserved during cloning of the device when Clone Radio Identity is disabled.

3.65.1.3
Key Value

The Key Value is the encryption value used to scramble and unscramble voice calls and data transmissions on privacy-enabled channels when Privacy Type is set to Enhanced.

Selecting a larger, multiple-digit value provides stronger scrambling protection. Each Key Value can be assigned a Key ID and Key Alias for easier recognition. A radio that has Privacy Type set to Enhanced supports a minimum of 1 to a maximum of 16 Keys. For security reasons, if the codeplug is read from a radio, the Key Value is shown as Ø. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
FFFFFFFFFE	1	1

NOTICE:
This feature is disabled if Privacy Type is set to None or Basic.

For security reasons when reading a radio, Key Value is shown as Ø. Key Value needs to be set prior to cloning if the destination radio key needs to be changed.

When a Report is generated based on a saved archive file, the Key Value will be displayed. It is recommended to set a password on the archive to ensure that only authorized users can view the Key Value within the archive file as well as while generating the Reports.

This feature is supported in Digital mode only.

3.66
MNIS System Set

The **MNIS System** set is used to configure all system-related parameters for the IP data gateway using the Motorola Network Interface Service (MNIS).

The following sections contain all the supported fields:

3.66.1
General (MNIS System)

The **General** section of the MNIS System set contains the following fields:

3.66.1.1
Data Gateway Radio ID

This is the Common Air Interface (CAI) ID of the MNIS in the radio network.

This ID is an individual ID that uniquely identifies the MNIS application in the radio system. This ID is used by other calling radios when addressing the MOTOTRBO Network Interface Service, for instance, when sending a text message.

Range:

Maximum	Minimum	Increment
65535	1	1

NOTICE: The MNIS is identified by this ID Over The Air (OTA). The Radio ID of the radios cannot be same as this ID.

3.66.1.2
MNIS Gateway UDP Port

The user enters the MNIS Gateway User Datagram Protocol (UDP) port number.

Range:

Maximum	Minimum	Increment
65535	1	1

3.66.1.3
Transmission TOT (sec)

The timeout timer determines the maximum duration allowed for a transmission from an application.

Range:

Maximum	Minimum	Increment
495 seconds	15 seconds	15 seconds

3.66.1.4
Enhanced Data Enabled

Checking this box indicates that the application will request for enhanced data traffic.

3.66.1.5
Active Voice Talkpath Limit

This field allows the user to specify the active voice talkpath limit.

Represents the number of voice calls the VRC gateway will be supporting concurrently. The number should not be greater than VRC Gateway Talkpath license or 'VRC Gateway Active Talkpath Max Capacity' whichever is lesser.

Range:

Maximum	Minimum	Increment
100	0	1

3.66.1.6
Data Gateway Queue Size

This field allows the user to specify the data gateway queue size limit.

Range:

Maximum	Minimum	Increment
50	1	1

3.66.1.7
TX Privacy Type

This feature allows privacy on selected digital channels.

Privacy is a software-based scrambling solution that is not robust, and is only meant to prevent eavesdropping. The signaling and user identification portions of a transmission are not scrambled. Receiving radio(s) must have the same Basic Privacy Key (for Basic Privacy) or the same Key Value and Key ID (for Enhanced Privacy) as the transmitting radio in order to unscramble the privacy-enabled voice call or to receive the privacy-enabled data transmission. Channels may have their privacy enabled or disabled via a short or long programmable button press (Privacy On/Off) or Privacy (Utilities Menu). A radio must have privacy enabled on the channel to transmit a privacy-enabled transmission, but this is not necessary for receiving radio(s). Privacy-enabled channels are still able to receive clear (unscrambled) transmissions. A visual indication appears on all display radios if the channel is privacy-enabled. The radio LED lights up green when transmitting and blinks rapidly when receiving an ongoing privacy-enabled transmission. The same behavior will be observed during scan operations. This is a radio-wide feature. This feature is not available on certain radio models.

None
Radio will not support any privacy feature.

Enhanced
Enhanced Privacy is allowed on selected digital channels. Each privacy-enabled channel must have a securely-configured Key Value associated with it. Garbled voice is heard on receiving radios with Key Values which do not match that of the radio transmitting a privacy-enabled voice transmission. Nothing is heard on the receiving radio if the Key ID of the transmitting radio does not match with all the Key IDs in the list of receiving radios.

Symmetric

NOTICE:
The Privacy, Basic Privacy Key, Privacy Alias, Key Alias, Key ID, Key Value, and Privacy (Utilities Menu) features are disabled if this feature is set to None.

The Privacy Alias, Key Alias, Key ID, and Key Value features are disabled if this feature is set to Basic.

The Basic Privacy Key feature is disabled if this feature is set to Enhanced.

This feature is supported in Digital mode only.

3.66.1.8
TX Privacy Alias

This feature provides a 16-character Privacy Alias to be assigned to a Key ID when Privacy Type is set to Enhanced.

Every Key ID can only have one Privacy Alias. Each Privacy Alias must be unique and cannot be a duplicate of another. If duplicate Alias is entered, the value shall be updated to be the previous value and display a message. The Privacy Alias is preserved during cloning of the device when Clone Radio Identity is disabled.

3.66.2
Tunnel Network (MNIS System)

The **Tunnel Network** section of the MNIS System set contains the following fields:

3.66.2.1
Gateway IP

This feature displays the Gateway IP Address of the server where the MNIS application is deployed.

Only valid IP addresses of the format x.x.x.x are allowed where x lies between 0 and 255.

3.66.2.2
Gateway Tunnel IP

Defines the IP Address used by the MNIS to communicate with the PC.

The first three octets of the Tunnel IP address follows the MNIS GUI IP Address. The last octet will be the MNIS GUI IP Address's last octet value + 1. For example, if the MNIS GUI IP Address is 192.168.10.1, the Tunnel IP address will be updated to 192.168.10.2. Only valid IP Addresses are allowed i.e. the format should be (x.x.x.x) where x lies between 0 and 255.

NOTICE:
This feature has a Subnet Mask of 255.255.255.0.

3.67
MNIS Advanced Set

The **MNIS Advanced** set is used to select advanced setting for the IP data gateway using the Motorola Network Interface Service (MNIS).

The following section contains all the supported fields:

3.67.1
General (MNIS Advanced)

The **General** section of the MNIS Advanced set contains the following fields:

3.67.1.1
Data Call Confirmed

This feature enables the individual data message dispatched by the MNIS to be transmitted confirmed (i.e. acknowledged) at Data Link level.

The MNIS resends the data message if the receiving radio does not respond with Data Link level acknowledgements or confirmations upon receiving the data message.

3.67.1.2
Compressed UDP Data Header

This feature selects the type of compression protocol used for the UDP Data Header.

Selecting MSI or DMR reduces delays in over the air data transmissions. However, when working with legacy radios that do not have the capability to handle compressed UDP data packets, this feature should be set to None.

3.68
MNIS Network Set

The **MNIS Network** set is used to configure the network and port settings for the IP data gateway using the Motorola Network Interface Service (MNIS).

The following section contains all the supported fields:

3.68.1
General (MNIS Network)

The **General** section of the MNIS Network set contains the following fields:

3.68.1.1
CAI Network

The Common Air Interface (CAI) standard specifies the type and content of signals transmitted by compliant radios.

A radio based on the CAI standard should be able to communicate with any other CAI radio, regardless of the manufacturer. The CAI Network is a value that is combined with the Radio ID to produce the individual radio's air interface network IP address. The CAI Network ID forms the first or most significant byte of each radio's network IP address. All radios must use the same CAI Network ID to be able to exchange data. It is recommended that the default value of 12 is used.

Range:

Maximum	Minimum	Increment
126	1	1

3.68.1.2 CAI Group Network

The Common Air Interface (CAI) standard specifies the type and content of signals transmitted by compliant radios.

A radio based on the CAI standard should be able to communicate with any other CAI radio, regardless of the manufacturer. The CAI Group Network is a value that is combined with the Group ID to produce the group's air interface network IP address. The CAI Group Network ID forms the first or most significant byte of each group's network IP address. All radios must use the same CAI Group Network ID to be able to exchange data.

Range:

Maximum	Minimum	Increment
239	225	1

3.68.1.3 TMS UDP Port

The User Datagram Protocol (UDP) is one of the core Internet protocol for sending short messages (datagram) between devices.

UDP enables communication between these devices via a unique port number. The TMS UDP Port specifies a dedicated port number for the target destination (e.g. computer or radio) to support the text messaging service (TMS).

Range:

Maximum	Minimum	Increment
65535		1

NOTICE:
The port numbers for the Network Services, e.g. ARS, TMS, Telemetry, etc., must always be different to avoid conflict.

3.68.1.4 Telemetry UDP Port

The User Datagram Protocol (UDP) is one of the core Internet protocol for sending short messages (datagram) between devices.

UDP enables communication between these devices via a unique port number. The Telemetry UDP Port specifies a dedicated port number for the target destination (e.g. computer or radio) to support the Telemetry service.

Range:

Maximum	Minimum	Increment
65535	1	1

NOTICE:
The port numbers for the Network Services, e.g. ARS, TMS, Telemetry, etc., must always be different to avoid conflict.

3.68.1.5

Location Server UDP Port

This feature allows the user to configure the User Datagram Protocol (UDP) port of the location server.

When the location packet data decompressed from location CSBK and forward to the PC via USB, the destination UDP port will be set. This is a radio-wide feature.

Range:

Maximum	Minimum	Increment
65535	1024	1

NOTICE:
The port numbers for the Network Services, e.g. ARS, TMS, Telemetry, etc., must always be different to avoid conflict.

This feature is supported in Digital, IP Site Connect, and Capacity Plus–Single-Site modes.

3.68.1.6

User Defined UDP Port 1

This allows the specification of three user-defined UDP ports for use of applications (other than the standard internal applications) that transmit data through the radio.

It is recommended to keep the value of this field unique from User Defined UDP 2 and User Defined UDP 3.

Range:

Maximum	Minimum	Increment
65535, Disabled	1	1

NOTICE:
It is not recommended to use the port numbers reserved for internal applications (3000, 3001, 4005, 4007, 4008).

This feature is disabled if the Disabled option is selected.

3.68.1.7

User Defined UDP Port 2

This allows the specification of three user-defined UDP ports for use of applications (other than the standard internal applications) that transmit data through the radio.

It is recommended to keep the value of this field unique from User Defined UDP 1 and User Defined UDP 3.

Range:

Maximum	Minimum	Increment
65535, Disabled	1	1

NOTICE:
It is not recommended to use the port numbers reserved for internal applications (3000, 3001, 4005, 4007, 4008).

This feature is disabled if the Disabled option is selected.

3.68.1.8 User Defined UDP Port 3

This allows the specification of three user-defined UDP ports for use of applications (other than the standard internal applications) that transmit data through the radio.

It is recommended to keep the value of this field unique from User Defined UDP 1 and User Defined UDP 2.

Range:

Maximum	Minimum	Increment
65535, Disabled	1	1

NOTICE:
It is not recommended to use the port numbers reserved for internal applications (3000, 3001, 4005, 4007, 4008).

This feature is disabled if the Disabled option is selected.

3.68.1.9 XCMP High Efficiency Data Enable

This field allows the user to enable or disable the XCMP High Efficiency Data feature.

3.68.1.10 XCMP Server UDP Port

This feature allows the user to configure the XCMP Server User Datagram Protocol (UDP) port.

User Datagram Protocol (UDP) is one of the core Internet protocol for sending short messages (datagram) between devices. UDP enables communication between these devices via a unique port number. The XCMP Server UDP Port specifies a dedicated port to which the MNIS will deliver all received CSBK-based raw data.

Range:

Maximum	Minimum	Increment
65535	1	1

NOTICE:
The port numbers for the Network Services, e.g. ARS, TMS, Telemetry, etc., must always be different to avoid conflict.

3.68.1.11

Battery Management UDP Port

The User Datagram Protocol (UDP) is one of the core Internet protocol for sending short messages (datagram) between devices.

UDP enables communication between these devices via a unique port number. The Battery Management Service (BM) UDP Port specifies a dedicated port number for the target destination (e.g. computer or radio) to enable communication between the BM client and BM server. The configurable BM UDP Port is for the destination server receive port only.

Range:

Maximum	Minimum	Increment
65535	1	1

NOTICE: The BM, Text Messaging Service (TMS) and, Telemetry port number must always be different to avoid conflict.

3.68.1.12

MNIS Control Interface TCP Port

This is the Transmission Control Protocol (TCP) port for the MNIS Control Interface server.

Range:

Maximum	Minimum	Increment
65535	1	1

3.68.1.13

Server TCP Port

This is the TCP Port on which to establish the voice server.

Range:

Maximum	Minimum	Increment
65535	1	1

3.68.1.14

Voice UDP Port

This is the UDP Port on which the UDP Voice is received.

Range:

Maximum	Minimum	Increment
65535	1	1

3.68.1.15

Destination UDP Port

The User Datagram Protocol (UDP) is one of the core Internet protocol for sending short messages (datagram) between devices.

UDP enables communication between these devices via a unique port number.

The following range are supported.

Table 61: Range

Minimum	Maximum	Default
1024	65535	4013

3.69
MNIS Forwarding Rules Set

The **MNIS Forwarding Rules** set is used to configure the forwarding rules for the IP data gateway using the Motorola Network Interface Service (MNIS):

The following fields are supported:

3.69.1
Type

Defines which User Datagram Protocol (UDP) Port that needs to be checked to overwrite the values in an outbound data packet.

3.69.2
IP

This feature displays the IP Address of the server where the application is deployed.

Only valid IP addresses of the format x.x.x.x are allowed where x lies between 0 and 255.

NOTICE:
This feature is applicable to MOTOTRBO Conventional radios in Digital mode only.

This feature is disabled when the Dual Capacity Direct Mode (DCDM) feature is enabled.

3.69.3
UDP Port

This feature specifies the User Datagram Protocol (UDP) port used by the application.

Range:

Maximum	Minimum	Increment
65535	1	1

3.70
MNIS Application Override Rules Set

The **MNIS Application Override Rules** set is used to configure the application override rules for the IP data gateway using the Motorola Network Interface Service (MNIS).

The following fields are supported:

3.70.1
Type

Allows the user to specify whether the port number to be compared should be source or the destination port number parameter of the incoming User Datagram Protocol (UDP) packet.

3.70.2
UDP Port

This feature specifies the User Datagram Protocol (UDP) port used by the application.

Range:

Maximum	Minimum	Increment
65535	1	1

3.70.3
Data Call Confirmed

If selected, the data with the UDP port specified in this rule is transmitted as confirmed data call.

If not selected then the data is transmitted as an unconfirmed data call.

3.70.4
Compressed UDP Data Header

This feature selects the type of compression protocol used for the UDP Data Header.

If set to Advantage or DMR, the IP/UDP header of the data packet with the UDP port specified in this rule is compressed using the specified compression protocol. If set to None, then the IP/UDP header is not compressed.

3.71
MNIS Sites Set

The **MNIS Sites** set is used to select the Capacity Max system and MNIS sites for the IP data gateway using the Motorola Network Interface Service (MNIS).

The following sections contain all the supported fields:

3.71.1
General (MNIS Sites)

The **General** section of the MNIS Sites set contains the following fields:

3.71.1.1
Site List Name

This text field allows the user to enter the name of the site.

3.71.1.2
Capacity Max System

This drop-down list allows the user to select the Capacity Max System for the MNIS Sites.

The options are None and all available Capacity Max system lists.

3.71.2
MNIS Sites (MNIS Sites)

The **MNIS Sites** section of the MNIS Sites set contains the following fields:

3.71.2.1
GNSS Coordinates Flag

The field determines if the Latitude and Longitude Values are to be considered.

If this feature is unchecked, the MNIS shall ignore and not attempt to load the Latitude and Longitude values specified in Capacity Max Site.

3.71.2.2
Site

Sites are picked up from all Capacity Max Sites belonging to the selected Capacity Max System.

NOTICE:

1 The Site cannot be set to None.

2 The same Site cannot be selected in different rows within the same table.

3.72
Bridge Settings Set

The **Bridge Settings** set is used to configure the general, licensing, and bridge system parameters for the Capacity Max Bridge feature.

See MOTOTRBO Capacity Max Bridge Feature on page 853 for a feature description.

The following sections contain all the supported fields:

3.72.1
MOTOTRBO Capacity Max Bridge Feature

The Capacity Max Bridge (CMB) is a software application that resides on the Capacity Max System Server (CMSS) and bridges supported call types between a Capacity Max System and a bridged radio system.

MOTOTRBO Connect Plus is supported as a bridged system type. The XRT 9100 Gateway serves as the CMB's voice gateway to the Connect Plus System.

The CMB is designed to assist during a migration process of finite duration by bridging supported call types between the two systems while previously existing sites are converted to Capacity Max operation, and while new Capacity Max sites are added to expand network coverage. Since its primary purpose is to facilitate complete migration to Capacity Max, thereby allowing radio users to fully utilize the robust Capacity Max feature set, the CMB should not be considered a long-term solution to bridging disparate radio systems.

See the *Capacity Max Migration Guide*, part number MN003727A01, for a complete description.

CMB license activation and CMSS configurations are perform with Radio Management.

Related Sets and Fields

The following CMSS Network Set on page 761 fields are supported:

- Preferred DNS Server IP on page 763
- Alternate DNS Server IP on page 763

The following Bridge Settings Set on page 853 fields are supported:

- Enable Capacity Max Bridge on page 854
- Log Size Limit (MB) on page 854
- Active Bridged Voice Talkpath Limit on page 855

- Licensing Server Available on page 855
- Enable Licensing Proxy Server on page 856
- Licensing Proxy Server Address on page 856
- Licensing Proxy Server Port on page 856
- Licensing Proxy Server Authorization Type on page 856
- Licensing Proxy Server Username on page 857
- Licensing Proxy Server Password on page 857
- XRT IP on page 857
- XRT Username on page 857
- XRT Password on page 857
- XRT Client TCP Port on page 857
- Outbound XRT Voice Port on page 858

The following Subscriber ID Mapping Set on page 858 fields are supported:

- Enable (Subscriber ID Mapping) on page 858
- Capacity Max Radio Alias on page 858
- Capacity Max Radio ID on page 858
- Direction (Subscriber Mapping ID) on page 859
- Bridged System Radio Alias on page 859
- Bridged System Radio ID on page 859

The following Talkgroup ID Mapping Set on page 860 fields are supported:

- Enable (Talkgroup ID Mapping) on page 860
- Capacity Max Radio Alias on page 860
- Capacity Max Talkgroup ID on page 860
- Direction (Talkgroup ID Mapping) on page 861
- Bridged System Talkgroup Alias on page 861
- Bridged System Talkgroup ID on page 861

3.72.2
General (Bridge Settings)

The **General** section of the Bridge Settings set contains the following fields:

3.72.2.1
Enable Capacity Max Bridge

This check box allows the user to enable or disable the Capacity Max Bridge (CMB) operation.

When enabled, the CMB can perform call bridging operations.

IMPORTANT: A CMB (Enable) license must be register and applied on the Capacity Max System Server (CMSS).

3.72.2.2
Log Size Limit (MB)

This field sets the maximum file size for any currently running Capacity Max Bridge (CMB) error log file.

When the file reaches the size limit, it is compressed and stored as an archive file. The recommended setting is 100 MB (or less).

Table 62: Range:

Maximum	Minimum	Increment
1024 MB	10 MB	1 MB

3.72.2.3
Active Bridged Voice Talkpath Limit

This field sets the maximum number of simultaneous calls that the Capacity Max Bridge (CMB) bridges between systems.

The configured value should be less than or equal to the Active Talkpath Limit configured for the MOTOTRBO Network Interface Service (MNIS) Voice and Radio Command (VRC) Gateway on the same Capacity Max System Server (CMSS).

IMPORTANT: Do not set this value to zero for the CMB or VRC.

Table 63: Range:

Maximum	Minimum	Increment
100	0	1

3.72.3
Licensing (Bridge Settings)

The **Licensing** section of the Bridge Settings set contains the following fields:

3.72.3.1
Licensing Server Available

This check box allows the user to enable licensing server online mode when the licensing server is continuously accessible by the Capacity Max Bridge (CMB), either directly or through a proxy server.

Ensure that the following prerequisites are met:

- Before selecting the check box, verify that the Capacity Max System Server (CMSS) is configured with a Domain Name Service (DNS) IP address.
- Do not select the check box unless the device has continuous IP connectivity with both the licensing server and the DNS server.

When the check box is unselected (the default setting), the CMB operates in offline mode.

IMPORTANT: If after online mode is configured, and the CMB (Enabled) License is registered, and the CMB configuration is later changed to offline mode, the CMB stops functioning. To resume bridging operations, restore the CMB (Enabled) License.

3.72.3.2

Enable Licensing Proxy Server

This check box allows the proxy server to contact the licensing server when the licensing server is operating in online mode.

NOTICE: This field is accessible when Licensing Server Available on page 855 is enabled.

3.72.3.3

Licensing Proxy Server Address

This field allows the user to enter the URL of the proxy server that the Capacity Max Bridge (CMB) uses to communicate with the licensing server.

NOTICE: This field is only accessible when Licensing Server Available on page 855 and Enable Licensing Proxy Server on page 856 are enabled.

This field is required when using online mode on the licensing server and when a proxy server is used to contact the licensing server. This feature requires the Capacity Max System Server (CMSS) to be configured with a DNS IP address.

3.72.3.4

Licensing Proxy Server Port

This field allows the user to enter the Transport Control Protocol (TCP) port on the proxy server that is used by the Capacity Max Bridge (CMB) to communicate with the licensing server.

NOTICE: This field is only accessible when Licensing Server Available on page 855 and Enable Licensing Proxy Server on page 856 are enabled.

This field is required when using online mode on the licensing server and when a proxy server is used to contact the licensing server.

Table 64: Range

Maximum	Minimum	Increment
65535	1	1

3.72.3.5

Licensing Proxy Server Authorization Type

This field defines the authentication type used by the proxy server.

This field is required when using online mode on the licensing server and when a proxy server is used to contact the licensing server.

The following authentication types are supported:

Basic
Select this option if the proxy server requires basic authentication using a Licensing Proxy Server Username on page 857 and Licensing Proxy Server Password on page 857.

Digest:
Select this option if the proxy server requires a digest authentication using an encrypted string configured in the Licensing Proxy Server Username on page 857 field.

None
Select this option when the proxy server does not require authentication.

3.72.3.6
Licensing Proxy Server Username

This field is used to enter a text string user name required by the licensing proxy server.

NOTICE: This field is only accessible when Licensing Proxy Server Authorization Type on page 856 is set to **Basic** or **Digest**.

3.72.3.7
Licensing Proxy Server Password

This field is used to enter a text string password required by the licensing proxy server.

NOTICE: This field is only accessible when Licensing Proxy Server Authorization Type on page 856 is set to **Basic** or **Digest**.

3.72.4
Bridge System (Bridge Settings)

The **Bridge System** section of the Bridge Settings set contains the following fields:

3.72.4.1
XRT IP

This field is used to enter the IP address of the XRT Gateway that serves as the voice gateway for the bridged Connect Plus system.

Format: `[000-255].[000-255].[000-255].[000-255]`

3.72.4.2
XRT Username

This field is used to enter a text string user name required for the Capacity Max Bridge (CMB) when connecting to the voice gateway for the Connect Plus system.

This user name must match the configuration of the username field of the client user account that CMB uses to connect to the XRT Gateway, as configured in the XRT Gateway device with the XRT Configuration Tool.

3.72.4.3
XRT Password

This field is used to enter a text string password required for the Capacity Max Bridge (CMB) when connecting to the voice gateway for the Connect Plus system.

This password must match the configuration of the password field of the client user account that CMB uses to connect to the XRT Gateway, as configured in the XRT Gateway device with the XRT Configuration Tool.

3.72.4.4
XRT Client TCP Port

This field allows the user to enter the Transport Control Protocol (TCP) port of the XRT device that serves as the voice gateway for the Connect Plus system.

The TCP port must match the client TCP port configured into the XRT Gateway with the XRT Configuration Tool.

Table 65: Range

Maximum	Minimum	Increment
65535	1	1

3.72.4.5 Outbound XRT Voice Port

This field is used to enter the User Datagram Protocol (UDP) port of the XRT Gateway that the Capacity Max Bridge (CMB) sends voice audio to, originating in the Capacity Max system.

This port must match the client UDP Start port of the XRT Gateway connecting to the CMB, as configured with the XRT Configuration Tool.

Table 66: Range

Maximum	Minimum	Increment
65535	1	1

3.73 Subscriber ID Mapping Set

The **Subscriber ID Mapping** set is used to configure the ID mapping for subscribers migrating from a Connect Plus system to a Capacity Max system. This is an optional advanced feature not required for most Connect Plus to Capacity Max migrations.

The following fields are supported:

3.73.1 Enable (Subscriber ID Mapping)

This check box allows the user to enable or disable the Subscriber ID Mapping feature.

NOTICE: Unchecking the box disables Subscriber ID Mapping for entries in the ID mapping table without removing the ID mappings from the table.

3.73.2 Capacity Max Radio Alias

This is an optional field and is used to enter the alias for the ID entered in the Capacity Max Radio ID field.

A maximum of 16 UTF8 characters are allowed.

3.73.3 Capacity Max Radio ID

This field is used to enter the Capacity Max Radio ID corresponding to this Subscriber ID mapping entry.

When the Direction (Subscriber Mapping ID) on page 859 column indicates **Capacity Max to Bridge System**, this is a virtual ID dialed by a Capacity Max radio user to reach the bridged system radio indicated in the Bridged System Radio ID on page 859 field. When the Direction column indicates

Capacity Max to Bridge System, an entry for this Capacity Max Radio ID must be present in the Capacity Max Subscriber Access Control (SAC) database, but the ID must not be assigned to any real Capacity Max radio, or to any other Capacity Max device or entity.

When the Direction (Subscriber Mapping ID) on page 859 column indicates **Bridge System to Capacity Max**, this is the actual Capacity Max Radio ID that is targeted when the bridged system radio user dials the ID indicated in the Bridged System Radio ID on page 859 field. When the Direction column indicates **Bridge System to Capacity Max**, the Capacity Max radio that corresponds to the Capacity Max Radio ID entry must use only the Capacity Max system. It must not register on the bridged system.

Table 67: Range

Maximum	Minimum	Increment
16776415	1	1

3.73.4
Direction (Subscriber Mapping ID)

This field defines the direction for calls between a Capacity Max system and the bridge system.

The following directions are supported:

Capacity Max to Bridge System
The Capacity Max Radio ID is a virtual ID dialed by the initiating radio on the Capacity Max system, and the Bridged System Radio ID is the actual ID assigned to the target of the call on the bridged system.

Bridge System to Capacity Max
The Bridged System Radio ID is a virtual ID dialed by the initiating radio on the Bridged System, and the Capacity Max Radio ID is the actual ID assigned to the target of the call on the Capacity Max System.

3.73.5
Bridged System Radio Alias

This is an optional field and is used to enter the alias for the ID entered in the Bridged System Radio ID field.

A maximum of 16 UTF8 characters are allowed.

3.73.6
Bridged System Radio ID

This field is used to enter the Bridged System ID corresponding to this Subscriber ID mapping entry.

When the Direction (Subscriber Mapping ID) on page 859 column indicates **Bridge System to Capacity Max**, this is a virtual ID that is dialed by a Bridged System radio user to reach the Capacity Max Radio ID that is configured into the Capacity Max Radio ID on page 858 field. When the Direction column indicates **Bridge System to Capacity Max**, the Bridged System Radio ID must not be assigned to any real radio on the bridged system, or to any other device or entity on the bridged system.

When the Direction (Subscriber Mapping ID) on page 859 column indicates **Capacity Max to Bridge System**, this is the bridged system actual radio ID that is targeted when the Capacity Max radio user dials the ID configured into the Capacity Max Radio ID on page 858 field. When the Direction column indicates **Capacity Max to Bridge System**, the bridged system radio that corresponds to the Bridged

System Radio ID entry must only use the bridged System. It must not register on the Capacity Max system.

Table 68: Range

Maximum	Minimum	Increment
16776415	1	1

3.74
Talkgroup ID Mapping Set

The **Talkgroup ID Mapping** set is used to configure the ID mapping for talkgroups migrating from a Connect Plus system to a Capacity Max system. This is an optional advanced feature not required for most Connect Plus to Capacity Max migrations.

The following fields are supported:

3.74.1
Enable (Talkgroup ID Mapping)

This check box allows the user to enable or disable the Talkgroup ID Mapping feature.

NOTICE: Unchecking the box disables Talkgroup ID Mapping for entries in the ID mapping table without removing the ID mappings from the table.

3.74.2
Capacity Max Radio Alias

This is an optional field and is used to enter the alias for the ID entered in the Capacity Max Talkgroup ID field.

A maximum of 16 UTF8 characters are allowed.

3.74.3
Capacity Max Talkgroup ID

This field is used to enter the Capacity Max Talkgroup ID corresponding to this talkgroup ID mapping entry.

When a Capacity Max radio user initiates a call on this ID, it is heard by all Capacity Max radios selected to this Group ID and by all radio users on the bridged system that are currently selected to the Talkgroup ID that is configured into the Bridged System Talkgroup field for the same entry.

NOTICE: To avoid possible confusion by radio users and by individuals responsible for monitoring the system, Talkgroup IDs listed in the Capacity Max Talkgroup ID field should not be programmed into bridged system radio zones.

When the Direction (Talkgroup ID Mapping) on page 861 column indicates **Do Not Bridge**, audio for this Talkgroup ID is not bridged between systems, regardless of whether the call is initiated on the Capacity Max system or on the bridged system.

Table 69: Range

Maximum	Minimum	Increment
16776415	1	1

3.74.4
Direction (Talkgroup ID Mapping)

This field defines the direction for calls by talkgroup between a Capacity Max system and the bridged system.

The following directions are supported:

Bi-directional
Indicates that bi-directional audio will be bridged for the two mapped IDs.

Do Not Bridge
When this option is selected, one talkgroup ID is entered per entry. Audio for the talkgroup ID is not bridged between systems, regardless of whether the call is initiated on the Capacity Max system or on the bridged system.

3.74.5
Bridged System Talkgroup Alias

This is an optional field and is used to enter the alias for the ID entered in the Bridged System Talkgroup ID field.

A maximum of 16 UTF8 characters are allowed.

3.74.6
Bridged System Talkgroup ID

This field is used to enter the Bridged System ID corresponding to this talkgroup ID mapping entry.

When a bridged system radio user initiates a call on this ID, it is heard by all bridged system radios selected to this Group ID and by all radio users on the Capacity Max system that are currently selected to the Talkgroup ID that is configured into the Capacity Max Talkgroup ID on page 860 field for the same entry.

NOTICE: To avoid possible confusion by radio users and by individuals responsible for monitoring the system, Talkgroup IDs listed in the Bridged System Talkgroup ID field should not be programmed into Capacity Max radio zones.

Table 70: Range

Maximum	Minimum	Increment
16776415	1	1